

2020 Census Detailed Operational Plan for: 7. Local Update of Census Addresses Operation (LUCA) – including New Construction Program

A New Design for the 21st Century

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Approvals

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Table of Contents

1. Document Purpose	1
2. Operational Overview	2
2.1 Operation Purpose	2
2.2 About This Document	2
2.3 LUCA Background	3
2.3.1 Census 2000 LUCA Program	3
2.3.2 2010 Census LUCA Program	4
2.3.3 2020 Census LUCA Operation	5
2.4 New Construction Background	7
2.4.1 Census 2000 New Construction Program	7
2.4.2 2010 Census New Construction Program	7
2.4.3 2020 Census New Construction Program	8
2.5 LUCA Operation Data Flow and Operational Influences	9
3. LUCA Design Overview and Process Description.....	16
3.1 LUCA Design Overview	16
3.1.1 High-Level Operational Design	16
3.1.2 Operational Context for the LUCA Operation Activities	16
3.1.2.1 LUCA Operational Inputs	18
3.1.2.2 LUCA Operational Controls.....	20
3.1.2.3 LUCA Operational Outputs.....	20
3.1.2.4 LUCA Operational Mechanisms	22
3.2 LUCA Process Description	25
3.2.1 LUCA Outreach [LUCA 7-1]	26
3.2.1.1 Prepare for LUCA Outreach and Participation [LUCA 7-1.1].....	27
3.2.1.2 Conduct LUCA Internal Training and Promotions [LUCA 7-1.2]	31
3.2.1.3 Provide LUCA Outreach Materials and Training [LUCA 7-1.3].....	34
3.2.2 LUCA Review [LUCA 7-2].....	42
3.2.2.1 Provide LUCA Participant Review Materials [LUCA 7-2.1]	44

3.2.2.2	Support LUCA Partners During Review Process [LUCA 7-2.2]	48
3.2.3	LUCA Returns and Validation [LUCA 7-3]	49
3.2.3.1	Process LUCA Feature Updates [LUCA 7-3.1]	51
3.2.3.2	Perform Preprocessing of LUCA Address Updates [LUCA 7-3.2]	52
3.2.3.3	Perform LUCA Matching and Address Validation [LUCA 7-3.3]	54
3.2.4	LUCA Feedback and Appeals [LUCA 7-4]	55
3.2.4.1	Provide Feedback to LUCA Participants [LUCA 7-4.1]	57
3.2.4.2	Support OMB in Establishing LUCA Appeals Office [LUCA 7-4.2]	58
3.2.4.3	Process Accepted LUCA Appeals from OMB [LUCA 7-4.3]	59
3.2.5	LUCA Closeout [LUCA 7-5]	60
3.2.5.1	Closeout LUCA Participants [LUCA 7-5.1]	61
3.2.5.2	Closeout LUCA Operation [LUCA 7-5.2]	63
4.	New Construction Design Overview and Process Description	64
4.1	New Construction Design Overview	64
4.1.1	High-Level Operational Design	64
4.1.2	Operational Context for the New Construction Program Activities	64
4.1.2.1	New Construction Program Operational Inputs	66
4.1.2.2	New Construction Program Operational Controls	67
4.1.2.3	New Construction Program Operational Outputs	68
4.1.2.4	New Construction Program Operational Mechanisms	69
4.2	New Construction Program Process Description	71
4.2.1	Plan New Construction Program [LUCA 7-6.1]	72
4.2.2	Conduct New Construction Promotions and Training [LUCA 7-6.2]	73
4.2.3	Perform New Construction Mailings and Review Support [LUCA 7-6.3]	75
4.2.4	Manage and Validate New Construction Returns [LUCA 7-6.4]	80
4.2.5	Closeout New Construction Program [LUCA 7-6.5]	81
5.	Cost Factors	82
5.1	LUCA Cost Factors	82
5.2	New Construction Cost Factors	83

6. Measures of Success	84
Appendix A – Terminology and Acronyms	85
Appendix B – References.....	88
Appendix C – Activity Tree for Local Update of Census Addresses Operation (LUCA) including New Construction Program (NC)	89

List of Figures

Figure 1: LUCA Operation Context Model (incl. New Construction Program)	3
Figure 2: 2020 Census Frame Development Integrated Operations Diagram (IOD)	10
Figure 3: Context Diagram for LUCA Operation Activities	17
Figure 4: LUCA Operation Context Model	25
Figure 5: LUCA Outreach [LUCA 7-1] Activities	26
Figure 6: Obtain OMB Clearance for LUCA Operation	28
Figure 7: Prepare LUCA Procedure and Draft Operation Specific Materials	28
Figure 8: Prepare and Publish Procedures for LUCA Appeals.....	31
Figure 9: Conduct LUCA Internal Training	32
Figure 10: Conduct LUCA Promotions	33
Figure 11: Provide LUCA Advance Notice Packages	34
Figure 12: Provide LUCA Invitation Packages	38
Figure 13: Conduct LUCA Participant Training	42
Figure 14: LUCA Review [LUCA 7-2] Activities	43
Figure 15: Provide LUCA Participant Review Materials	44
Figure 16: Support LUCA Partners During Review Process	48
Figure 17: LUCA Returns and Validation [LUCA 7-3] Activities.....	50
Figure 18: Process LUCA Feature Updates.....	51
Figure 19: Perform Preprocessing of LUCA Address Updates	52
Figure 20: Perform LUCA Matching and Address Validation.....	54
Figure 21: LUCA Feedback and Appeals [LUCA 7-4] Activities	56
Figure 22: Provide Feedback to LUCA Participants	57
Figure 23: Support OMB in Establishing LUCA Appeals Office	58
Figure 24: Process Accepted LUCA Appeals from OMB.....	59
Figure 25: LUCA Closeout [LUCA 7-5] Activities	60
Figure 26: Closeout LUCA Participants.....	61
Figure 27: Closeout LUCA Operation.....	63

Figure 28: Context Diagram for New Construction Program Activities	65
Figure 29: New Construction Program Context Model.....	71
Figure 30: Plan New Construction Program.....	72
Figure 31: Conduct New Construction Promotions and Training	74
Figure 32: Provide New Construction Invitation Packages.....	75
Figure 33: Provide New Construction Review Materials and Participant Support	78
Figure 34: Manage and Validate New Construction Returns	80
Figure 35: Closeout New Construction Program.....	81

List of Tables

Table 1: LUCA Operational Inputs.....	18
Table 2: LUCA Operational Controls.....	20
Table 3: LUCA Operational Outputs.....	21
Table 4: Staff Resources Used Within LUCA Operational Activities	22
Table 5: Infrastructure Sites for LUCA Operational Activities.....	22
Table 6: Systems Used Within LUCA Operational Activities	23
Table 7: New Construction Program Operational Inputs	66
Table 8: New Construction Program Operational Controls.....	67
Table 9: New Construction Program Operational Outputs.....	68
Table 10: Staff Resources Used Within New Construction Program Operational Activities	69
Table 11: Infrastructure Sites for New Construction Program Operational Activities.....	69
Table 12: Systems Used Within New Construction Program Operational Activities	70
Table 13: Acronyms and Abbreviations List.....	85

1. Document Purpose

The 2020 Census Detailed Operational Plan for the Local Update of Census Addresses operation (LUCA) to include the 2020 Census New Construction program is intended for use by U.S. Census Bureau managers, staff, contractors, and other internal and external stakeholders working on the 2020 Census. The document presents the detailed operational design for both the 2020 Census LUCA operation and 2020 Census New Construction program, including a summary of the operational processes involved, their inputs, outputs and controls, and the basic mechanisms employed to conduct the operational work.

Anticipated uses of this document include the following:

- Communication – Documents operational design details for internal and external stakeholders.
- Planning – Documents planning assumptions and key milestones.
- Staffing – Documents staffing needs and strategies.
- Design – Describes operations and flows, which inform design of Information Technology (IT) systems, manual processes, and training.
- Development – Identifies business rules and required capabilities to be developed.
- Testing – Provides a basis for developing integrated test plans for IT systems and processes.

This document complements the 2020 Census Operational Plan, which presents the 2020 Census operational design and covers all operations required to execute the 2020 Census, starting with pre-census address and geographic feature updates and ending once census data products are disseminated and coverage and quality are measured.

2. Operational Overview

2.1 Operation Purpose

The LUCA operation provides an opportunity for tribal, state, and local governments to review and improve the address lists and maps used to conduct the 2020 Census. This operation satisfies the requirements of the Census Address List Improvement Act of 1994 (Public Law (P.L.) 103-430).

The New Construction program provides an opportunity for tribal, state and local governments to submit city-style addresses in self-response areas for living quarters under construction during or after March 1, 2018 with completion expected by Census Day, April 1, 2020.

2.2 About This Document

This document provides the detailed operational planning information for two closely related but independent sets of activities intended to allow the Census Bureau to update its address lists using geographic knowledge from participating tribal, state, and local governmental units.

Specifically, this plan describes:

1. The 2020 Census LUCA operation proper, which conducts activities to support the requirements of Public Law 103-430 allowing tribal, state, and local governmental units to review the Census Address list and provide updates based on timely information available in their local records.
2. The 2020 Census New Construction program, which conducts activities with tribal, state, and local governments to allow them the opportunity to update the Census Bureau's address list with living quarters under construction beginning March 2018 with completion expected by April 1, 2020.

The structure of these activities is given in Figure 1, the 2020 Census LUCA Operation Context Model. Activities 7-1 through 7-5 in this model constitute the core LUCA operation activities for the 2020 Census. Activity 7-6 constitutes the 2020 Census New Construction program activities.

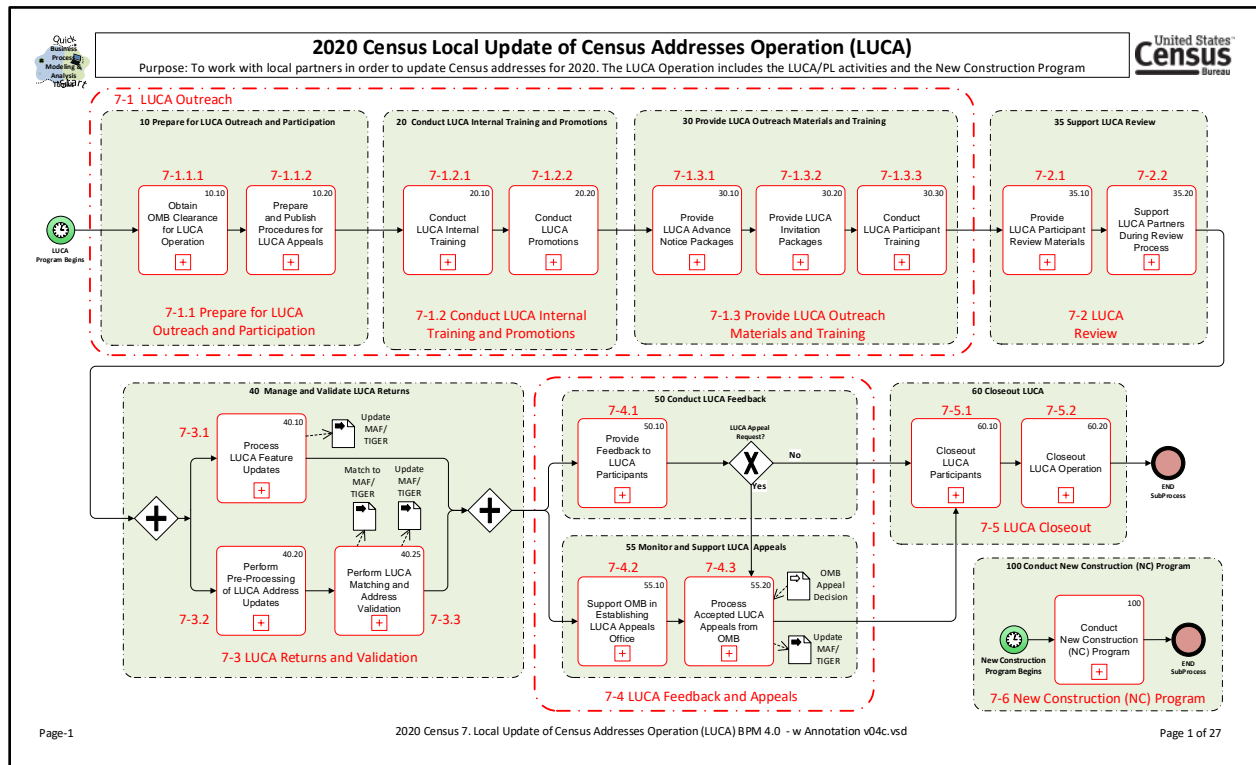


Figure 1: LUCA Operation Context Model (incl. New Construction Program)

Additional background on LUCA and New Construction is provided in the remainder of Section 2 of this document. The detailed plans for LUCA and New Construction are then discussed in Sections 3 and 4 of this document, respectively.

2.3 LUCA Background

The Census Address List Improvement Act of 1994 (P.L. 103-430) authorized the Census Bureau to provide individual addresses to officials of tribal, state, and local governments who agreed to conditions of confidentiality in order to review and comment on the Census Bureau's address list prior to the Census 2000. The Act strengthened the Census Bureau's partnership capabilities with participating governments by expanding methods the Census Bureau could use to exchange address information. Since the Census Address List Improvement Act of 1994, there have been two LUCA operations in support of Census 2000 and the 2010 Census.

2.3.1 Census 2000 LUCA Program

The Census 2000 LUCA Program consisted of two phases: LUCA 1998 and LUCA 1999. LUCA 1998 included areas to be enumerated in Census 2000 by mailout/mailback, where the Census Bureau mailed questionnaires directly to households. The Census Bureau provided address lists that contained city-style addresses that have a house number and street name (e.g., 212 Elm

Street) used for mailing or to provide location information for emergency services, such as police, fire, and rescue (E-911 addresses). Participants could review and make updates to the address list by adding new addresses, correcting addresses, deleting addresses, identifying nonresidential addresses, and identifying out-of-jurisdiction addresses.

LUCA 1999 included areas to be enumerated by the Update/Leave or Update/Enumerate operations. For these operations the Census Bureau sent field staff to each household either to leave a questionnaire or to interview and enumerate residents directly, respectively. The address lists in this areas contained many noncity-style addresses, (e.g., General Delivery, Rural Route and Box Number, Highway Contract Route and Box Number, and Post Office Box only delivery), which do not contain a house number and/or a street name. In addition, the addresses could also be only location descriptions such as “BRICK HOUSE with ATTACHED GARAGE ON RIGHT,” structure points (geographic coordinates), and census geographic codes including state code, county code, census tract number, and census block number. LUCA 1999 participants received block counts of all housing unit addresses within their jurisdiction and could review those counts and provide block count challenges to the Census Bureau for census blocks where address count discrepancies existed.

Participants in both phases received census maps that they could update and use for geocoding addresses. Additionally, all participants could appeal the Census Bureau’s address determinations at the end of the Census 2000 LUCA Program.

2.3.2 2010 Census LUCA Program

As a result of various participant surveys and evaluations, the 2010 Census LUCA Program identified various improvements to the LUCA Program:

- The two separate Census 2000 LUCA phases were combined into one review cycle for all address types.
- Expansion of the review time from 90 days to 120 days helped participants by providing more time to complete their review.
- The Census Bureau provided more advance notice of the pending LUCA Program and initiated a comprehensive communication program with participants.
- The Census Bureau provided participants with the opportunity to use the Census Bureau supplied Master Address File /Topologically Integrated Geographic Encoding and Referencing (TIGER) System (MAF/TIGER) Partnership Software application as a tool for providing both address and feature updates.

Furthermore, the Census Bureau provided the choice of one of the following three participation options:

- Option 1—Title 13 Full Address List Review, where participants signed the Title 13 Confidentiality Agreement and completed a Self-Assessment Checklist designed to measure participants' ability to meet the Census Bureau's security requirements. The participants also received the census address list and address count list to review and could submit address updates to the Census Address List and/or challenge the Address Count List. The participants could appeal address results.
- Option 2—Title 13 Local Address List Submission, where participants signed the Title 13 Confidentiality Agreement and completed a Self-Assessment Checklist designed to measure participants' ability to meet the Census Bureau's security requirements. The participants also received the Census Address List and Address Count List to review. Participants submitted their entire local address list instead of updating the Census Bureau's list. Additionally, participants could appeal address results.
- Option 3—Non-Title 13 Local Address List Submission, for which participants did not receive the Title 13 Address List. However, the participants did receive the Census Address Count List to review and submitted their entire local address list. Participants could not participate in the appeals process.

All participants could provide map feature and legal boundary updates regardless of the option they selected.

2.3.3 2020 Census LUCA Operation

In order to meet the goals of increasing participation and coverage while reducing operational cost, and identifying ways to improve the quality of updates, the LUCA Operation Improvement Team undertook extensive research that resulted in 11 recommendations to the LUCA Operation as detailed in the 2020 Census Operational Plan. The research also identified the components of the 2010 Census LUCA Program that were successful and should be repeated for the LUCA Operation.

To reduce the complexity of the operation and increase the quality of addresses from participants, the 2020 Census LUCA Operation offers a primary method of participation, the Full Address List Review. This is a full Title-13 address list review allowing participants to add, delete, change or correct an address (including the location of the address). Additionally, participants will have the choice of receiving their LUCA materials in the following formats:

- Address List – paper, Excel spreadsheet, or comma-delimited text file.
- Maps – paper, Portable Document Format (PDF) or shapefiles.

The LUCA Operation address list and small format PDF maps will include structure coordinates (the coordinate locations of housing units in the MAF/TIGER System) and will allow participants to return structure coordinates with their submissions. In addition, the address list will include United States Postal Service (USPS) un-geocoded Delivery Sequence File (DSF) addresses for state and county partners. DSF un-geocoded addresses are addresses for which the Census Bureau is unable to assign a specific block. If LUCA Operation participants can identify the census tract and census block for any un-geocoded addresses, this will help to improve the Census Address List. This will also save participants time by adding geocode information to existing address records instead of adding new address records.

For the Census 2000 LUCA Program, participant-submitted LUCA addresses were validated during the Block Canvassing and LUCA Validation Operations, depending on their geographic locations. In the 2010 Census LUCA Program, the nationwide Address Canvassing Operation validated LUCA participant submitted addresses. The reengineered Address Canvassing for the 2020 Census will include an in-office address validation process that will eliminate the need to conduct in-field address canvassing for every census block nationwide. Therefore, LUCA operation participants will be required to submit full address data, including individual unit numbers for multiunit structures (e.g., Apt 1, Apt 2, Unit 1, and Unit 2).

The LUCA operation will use tools developed for evaluating and processing address files through the Geographic Support System (GSS), such as the automated Address Source Evaluation, as well as address data acquired from the Census Bureau's GSS partners. Furthermore, the Geographic Update Partnership Software (GUPS) provides participants with a Geographic Information System (GIS) application and is available to all participants.

The LUCA Operation will continue to provide a 120-day review time, continue the six-month advance notice, expand the comprehensive operation communications with participants, provide a variety of media types, improve the Partnership Software application (i.e., GUPS), and continue to expand state participation.

In accordance with the Census Address List Improvement Act of 1994, Public Law 103-430, the Feedback phase of the LUCA operation provides participating governments with detailed feedback materials that document which local address additions and updates the Census Bureau accepted or did not accept. Participants' review of the feedback materials is voluntary.

As in 2010, the Census Bureau will provide participants eligible to receive feedback:

1. A 2020 LUCA Feedback Address Update Summary providing a numerical breakdown of the disposition of partner updates.
2. A 2020 LUCA Feedback Detailed Address List providing the disposition of each update processed by the Census Bureau.

3. A 2020 LUCA Feedback Full Address Count List showing the number of housing units (HU) and group quarters (GQ) for each census block in the entity's jurisdiction.
4. Census maps.
5. A Quick Reference Guide to help partners begin their review of the feedback materials
6. A User's Guide providing detailed instructions on how to complete the review.

LUCA participants that wish to dispute the Census Bureau's determinations regarding their submissions of address information may appeal those determinations if they meet specific eligibility criteria. Appeals must be filed within 45 calendar days after the eligible government's receipt of its feedback materials. Appeals filed after the deadline will be denied. Filing an appeal is optional and is not a requirement of the LUCA program. There will be a column in the 2020 LUCA Feedback Detailed Address List allowing the partner to flag an address for appeal.

2.4 New Construction Background

The Census Address List Improvement Act of 1994 (Public Law 103-430) strengthened the Census Bureau's partnership capabilities with participating governments by expanding the methods the Census Bureau could use to collect address information from tribal, state, and local governments.

2.4.1 Census 2000 New Construction Program

The Census 2000 New Construction program offered local and tribal governments a final opportunity to review the Census 2000 address list and to add new HU and GQ addresses. State governments were not eligible to participate but could be enlisted by local governments to receive New Construction program materials. In order to participate in the New Construction program, an entity was required to have participated in the Census 2000 LUCA Program. New Construction program participants could not submit any addresses they disputed during the LUCA program address appeals process except those addresses not found to exist during the LUCA program but completed basic construction after the canvassing operation. Participants were given either a paper or electronic address list for their jurisdiction and could make additions to that list. They could also make additions and changes to the Census Bureau maps where the street or road associated with the new address was missing or shown incorrectly. The program did not allow for address deletions or corrections or for changes to the governmental unit legal boundaries shown on the maps.

2.4.2 2010 Census New Construction Program

The 2010 Census New Construction program ran from August 2009 through March 2010. The program was similar in scope and operation to the Census 2000 New Construction program with the following exceptions:

- The 2010 Census New Construction program materials did not include a Title 13 address list, where participants were given the opportunity to review the census address lists for their respective jurisdiction.
- The 2010 Census New Construction program was not linked to LUCA participation. It was exclusively designed for collecting newly constructed HUs built after the 2010 Census Address Canvassing Operation.
- The 2010 Census New Construction excluded paper participation and feature updates because of time constraints. There was not enough time for receiving, keying, and processing addresses into the MAF/TIGER System Database to subsequently support the 2010 Census Nonresponse Followup Vacant Delete Check operation. In addition, the program also excluded GQ addresses because there were sufficient other operations within the Census Bureau that were collecting new GQ addresses.
- The 2010 Census New Construction program was offered to local and tribal jurisdictions whose boundaries contained areas where the 2010 Census questionnaires would be delivered and returned by mail. New addresses for units outside the mailout/mailback areas were added to the address list at the time field staff delivered questionnaires.
- No street or boundary updates were accepted.
- Address lists submitted without geocoding information were not accepted.

2.4.3 2020 Census New Construction Program

The New Construction program utilizes the expertise of tribal, state, and local governments to improve the accuracy and completeness of the address list used for the 2020 Census. The purpose of the New Construction program is to obtain city-style addresses for newly built living quarters in blocks where census questionnaires are delivered through the self-response method. New addresses for units outside the self-response area will be added to the address list at the time of questionnaire delivery in Update Leave (UL) areas or during the enumeration attempt in Update Enumerate (UE) areas. The Census Bureau asks participants in the New Construction program to submit addresses of any living quarter for which basic construction (closing the structure to the elements) starts during or after March 1, 2018 and will be completed by or before Census Day (April 1, 2020).

The 2020 Census New Construction program will be similar in scope and operation to the 2010 Census New Construction program with the following exceptions:

- The 2020 Census New Construction participants can receive GUPS, a census provided application that participants can use to prepare and submit their list of new living quarters addresses.

- The Census Bureau will match program participant submissions to the address records in the 2020 Census address list.
- The participants will be required to submit full address data, including individual unit numbers for multiunit structures (e.g., Apt 1, Apt 2, Unit 1, and Unit 2), and geographic coordinates wherever possible, and housing addresses with nonalpha or nonnumerical characters such as an asterisk (*) will be rejected.
- States can participate in 2020 Census New Construction program.
- GQ and Transitory Locations addresses will be allowed with the prescribed format for correct city-style addresses and geocodes.
- Puerto Rico will not participate in New Construction. Other census operations will collect the additional addresses.
- Registered participants will be able to download program materials from the New Construction website.

2.5 LUCA Operation Data Flow and Operational Influences

Figure 2 is an Integrated Operations Diagram (IOD), which depicts the major interactions among the operations and external entities involved in the development of the 2020 Census Frame (address and spatial data). This diagram shows the Geographic Programs operation (GEOP) as the hub of frame development and GEOP's interactions with the other 2020 Census operations that have a role in frame development. GEOP is composed of three components: Geographic Delineations component (GEOP/GD), Geographic Partnerships component (GEOP/GP), and Geographic Data Processing component (GEOP/GDP). Also shown are the upstream and downstream operational influences, including the Field Infrastructure operation (FLDI), Address Canvassing operation (ADC), Local Update of Census Addresses operation (LUCA), New Construction program (NC), Redistricting Data Program operation (RDP), Count Review operation (CRO), Response Processing operation (RPO), UL operation, UE operation, Group Quarters operation (GQ), Enumeration at Transitory Locations operation (ETL), Nonresponse Followup operation (NRFU), Data Products and Dissemination operation (DPD), and Archiving operation (ARC).

This diagram covers frame development for the 2020 Census (stateside and Puerto Rico). It does not cover development of the frame for the Island Areas Censuses or Post-Enumeration Survey (Coverage Measurement) operations.

The discussion below walks the reader through the diagram, using the circled numbers to help the reader follow the flow.

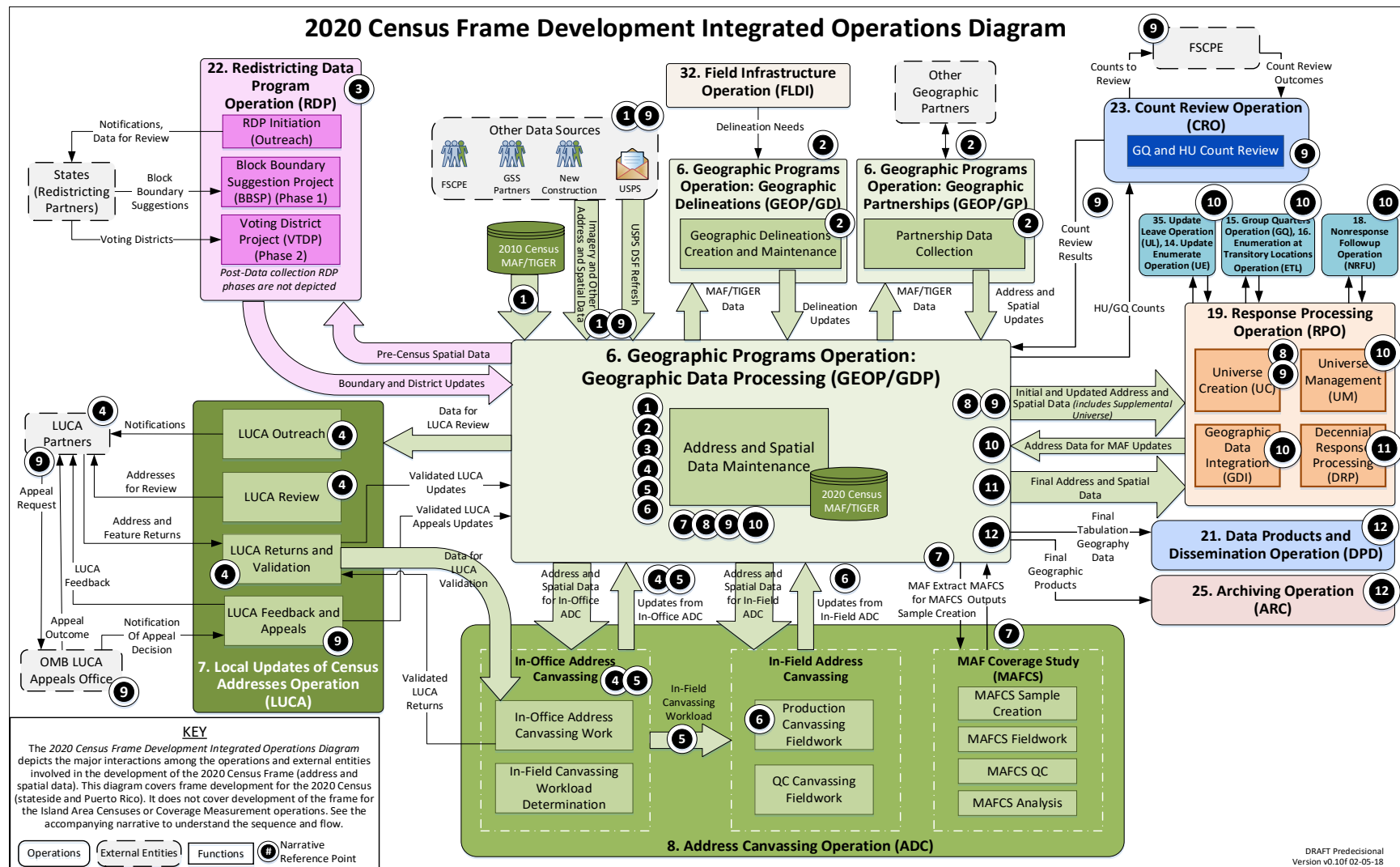


Figure 2: 2020 Census Frame Development Integrated Operations Diagram (IOD)

① Frame development for the 2020 Census includes, as a starting point, the 2010 Census address and spatial data from the Master Address File/Topologically Integrated Geographic Encoding and Referencing (MAF/TIGER) database and any ongoing updates that have been performed throughout the early part of the decade. Frame development takes inputs from various external sources to update the address and spatial data in the MAF/TIGER system.

The United States Postal Service (USPS) typically provides data to the Census Bureau twice a year, in the spring and the fall, through the Delivery Sequence File (DSF). The DSF is the list of all addresses (and some related data) maintained by the USPS for mail delivery and is the most complete USPS address database available. GEOP processes the DSF with other data from the USPS through an activity collectively known as the “DSF Refresh.”

Other sources, such as Federal-State Cooperative for Population Estimates (FSCPE) and Geographic Support System (GSS) Partners provide data to GEOP/GDP, which is used in validating and updating the MAF/TIGER data. Based on data from all these sources, GEOP/GDP updates the MAF/TIGER data throughout the decade.

② The GEOP/GP performs outreach activities to encourage and motivate participation in the Geographic Partnership Programs. Partner groups, including tribal, state, and local governments, and coordinating agencies, provide address and spatial data updates to GEOP/GP, which sends them to GEOP/GDP to update the MAF/TIGER data.

The GEOP/GD determines, delineates, and updates the geographic area boundaries for 2020 Census data collection and tabulation. GEOP/GD performs the delineation of various Collection Geography areas, based on the Basic Collection Unit (BCU), the smallest unit of collection geography for all 2020 Census listing-based operations. In an effort to ensure the most cost-effective and efficient process to enumerate households, every BCU in the United States is assigned to one specific Type of Enumeration Area (TEA). The TEA assignment for a given BCU is based on address types and other characteristics of the BCU, including an assessment of the likelihood of residents to self-respond and accessibility of the BCU. The TEA assignment determines the methodology used for frame creation and enumeration of the households within the BCU. Based on the needs of the FLDI operation, GEOP/GD also supports Field Management Area delineation, which includes delineation of geographic areas necessary to manage and accomplish the fieldwork for the 2020 Census. In addition to the collection geography delineation work described above, GEOP/GD is also responsible for 2020 Census Tabulation Geography delineation. Tabulation Geography delineation data are used by DPD at the conclusion of the 2020 Census during the creation of the 2020 Census data products. GEOP/GDP updates the MAF/TIGER data to reflect both these kinds of delineations.

GEOP/GP and GEOP/GD activities began in 2016 and are ongoing throughout frame development.

③ In addition to inputs provided by partners through the GEOP/GP component, the 2020 Census includes an operation, RDP, which provides each state the opportunity to identify the small area geographies needed for legislative redistricting and the legally required Public Law (P.L.) 94-171 redistricting data tabulations by the mandated deadline of April 1, 2021, one year from Census Day. RDP includes activities to update the frame with current block boundary suggestions (2015 – 2017) and voting district project inputs (2017 – 2020).

Once RDP establishes which states will participate, it sends those states packages, including pre-census spatial data that reflect the boundaries and features in the MAF/TIGER data. The participants update these shapefiles and provide them back to RDP, which reviews them and resolves any issues. Once reviewed, the updated files are provided to GEOP/GDP for use in updating the MAF/TIGER data.

④ Another operation is Local Update of Census Addresses (LUCA). LUCA provides an opportunity for tribal, federal, state, and local governments to review and improve the address lists and maps as required by P.L. 103-430. LUCA sends an advance notice package to approximately 39,000 state, local, and tribal governments informing them about LUCA. Participating LUCA partners that have signed an agreement to protect the Title 13 data contained in the Census Bureau address files are provided review materials, including shape files and address data from MAF/TIGER for review. The material provided for LUCA review includes some MAF/TIGER updates from the ongoing In-Office Address Canvassing (ADC) work. The LUCA partners review the materials and provide any updates as address and feature returns. Address matching is used to match and flag returns for validation as needed. 2020 Census LUCA addresses that are not validated during address matching are sent to ADC for in-office validation. In-office validation results are returned to LUCA. LUCA provides updates for validated addresses from LUCA partner returns to GEOP/GDP for use in updating the MAF/TIGER data. Addresses that were not validated are subsequently sent back to LUCA partners as part of the LUCA feedback activity.

⑤ A critical part of frame development is Address Canvassing (ADC). ADC's purpose is to deliver a complete and accurate address list and spatial database for enumeration and determine the type and address characteristics for each living quarter. ADC comprises three main functions: In-Office Address Canvassing, In-Field Address Canvassing, and the MAF Coverage Study (MAFCS).

In-Office Address Canvassing is a continuous process that measures, assesses, and ensures the completeness and accuracy of the MAF and associated attributes and geospatial data. In-Office Address Canvassing, which began in September 2015 and continues during the frame development process, receives address and spatial data from GEOP/GDP. External updates to these data that occur during ADC are sent on an ongoing basis from GEOP/GDP as new information is provided by activities such as GEOP/GP and LUCA.

Any updates to address and spatial data resulting from In-Office Address Canvassing are provided to GEOP/GDP for incorporation into the MAF/TIGER data.

The BCUs that cannot be validated through In-Office Address Canvassing procedures or for which address characteristics cannot be adequately determined are sent to the field for in-person canvassing and become part of the In-Field Address Canvassing workload.

⑥ In-Field Address Canvassing is the process of having field staff visit specific geographic areas to identify every place where people could live or stay. Field staff compare what they see on the ground to the existing census address list and either verify or correct the address and location information. Listers knock on every door to verify address information, collect associated mailing address information, and collect information about any additional housing units present at the address. Field staff also classify each living quarter as a housing unit or group quarter. The results are made available to GEOP/GDP to update the MAF/TIGER data.

⑦ The MAF Coverage Study (MAFCS) is a recurring address canvassing operation to statistically determine the over/under coverage for the entire frame. MAFCS began in April 2016 and work continued into 2017. GEOP/GDP provides an extract of addresses from the MAF for the MAFCS to sample. The MAFCS performs fieldwork and analyzes the sample to determine any over-coverage and under-coverage issues resulting from the In-Office Address Canvassing work. The results of the MAFCS are used to improve In-Office Address Canvassing procedures. Unfortunately, the MAFCS was discontinued at the end of the second quarter in FY 2017.

⑧ GEOP/GDP provides initial address and spatial data, including the TEA designations and the field management area delineations to RPO so it can create the initial enumeration case universe. RPO uses this information to create workload for each of the response data operations, including Forms Printing and Distribution operation (FPD), Internet Self-Response operation, Census Questionnaire Assistance operation, as well as UL, UE, GQ, ETL, and NRFU.

⑨ Additional updates to the MAF/TIGER data may be identified after the initial universe is sent to RPO as a result of the LUCA appeals, New Construction, CRO, and subsequent refreshes

of USPS DSF data. These data are provided to RPO in what is known as the Supplemental Universe.

LUCA includes an appeals process to allow participants to contest the Census Bureau's responses to their inputs. Once LUCA participants receive their feedback materials in the summer of 2019, they have 30 calendar days to file an appeal with the LUCA Appeals Office within the Office of Management and Budget (OMB). Upon receipt of a LUCA appeal, the LUCA Appeals Office uses the supporting documentation sent by the participant to decide whether to accept or reject an appeal. Once OMB makes a determination on a LUCA appeal, it notifies the participant of the determination. The LUCA Appeals Office delivers accepted LUCA appeals to GEOP/GDP, which processes the appealed addresses, updating the MAF/TIGER data accordingly.

The New Construction program utilizes the expertise of tribal, state, and local governments to improve the accuracy and completeness of the address list used for the 2020 Census. The purpose of the New Construction program is to obtain city-style addresses for newly built housing units (HU) in blocks where census questionnaires are delivered through the self-response method. New addresses for units outside the self-response area will be added to the address list at the time of questionnaire delivery in UL areas or during the enumeration attempt in UE areas. The Census Bureau asks participants in the New Construction program to submit addresses of any HU for which basic construction (closing the structure to the elements) will be completed by or before Census Day (April 1, 2020).

CRO, in partnership with FSCPE, enhances the accuracy of the 2020 Census through remediating potential gaps in coverage by implementing an efficient and equitable process to identify missing housing units, and identifying and correcting missing or geographically misallocated large group quarters (GQ) and their population. For frame development, GEOP/GDP sends HU and GQ counts to CRO for validation. Any address changes resulting from CRO are incorporated into the MAF/TIGER data by GEOP/GDP.



Additional frame development support is provided by address updates from UL, UE, GQ, and ETL, and from NRFU's field verification activities. As noted above, universe and address updates occur during field operations. All listing results and other address changes identified through the field data collection operations are sent back to GEOP/GDP through the RPO Geographic Data Integration function.

11 Once data collection is complete, the final address and spatial data are sent from GEOP/GDP to the RPO Decennial Response Processing Function, which uses the geographic data to prepare the response data for subsequent tabulation and data products creation activities.

12 The final geographic data files (Tabulation Geography data) are sent from GEOP/GDP to DPD to be used in the creation of the various 2020 Census data products. DPD uses this geographic data to determine how to structure and layer the data by geographic area (e.g., state, city, and tract).

At the conclusion of the 2020 Census, ARC receives final geographic products from GEOP/GDP frame development to be transferred to the National Archives and Records Administration (NARA) as required.

3. LUCA Design Overview and Process Description

3.1 LUCA Design Overview

The sections below present the high-level design for the LUCA Operation. Please refer to the 2020 Census Operational Plan for a complete inventory of design decisions for all 2020 Census operations.

3.1.1 High-Level Operational Design

The design of the LUCA Operation for the 2020 Census includes five major operational activity areas:

- **LUCA Outreach**
- **LUCA Review**
- **LUCA Returns and Validation**
- **LUCA Feedback and Appeals**
- **LUCA Closeout**

Together, these activity areas represent the complete set of work that needs to be performed to conduct this operation.

The full hierarchy of activities for the LUCA operation is provided in Appendix C in the form of an Activity Tree. In the Activity Tree, each major operational activity area listed above is numbered and then decomposed into a numbered set of subactivities, some of which are further decomposed into more detailed numbered subactivities or steps.

For a full description of the operational subactivities that comprise the LUCA operation, see the Detailed Process Description as outlined in Section 3.2 below.

3.1.2 Operational Context for the LUCA Operation Activities

The LUCA operational activities described above are conducted within the context of other 2020 Census operations and other programs or data sources that are external to the 2020 Census Program. One way to depict an operational context is by using a “Context Diagram,” which shows the boundary of the operational process, the operational activities it contains, and the information exchanged with its neighbor operations (or other entities) as well as the resources (mechanisms) needed to conduct the operational work.

Figure 3 is a top-level context diagram for the LUCA operation activities represented as an Integrated Definition, Level 0 (IDEF0) Model. An IDEF0 Model of a process (or operation) shows the Inputs, Controls, Outputs, and Mechanisms of the process. These IDEF0 model elements are summarized below and described further in the sections that follow.

The yellow box in the center of the IDEF0 model lists the major operational activity areas for the operation, numbered as given in the LUCA operation Activity Tree in Appendix C. Specific Information Exchanges (IE) are shown in different colored boxes to represent the Inputs (green boxes on left side), Outputs (orange boxes on right side), Controls (purple boxes on top) and Mechanisms (blue boxes on the bottom). Boxes to the left of the Inputs indicate the *Provider* of the Inputs to the operation (typically another 2020 Census operation or an external source). The Provider of the Controls is noted in the box itself. Boxes to the right of the Outputs indicate the *Receiver* of the Outputs (typically another 2020 Census operation or external entity). Each Information Exchange has a name and a unique number for identification purposes.

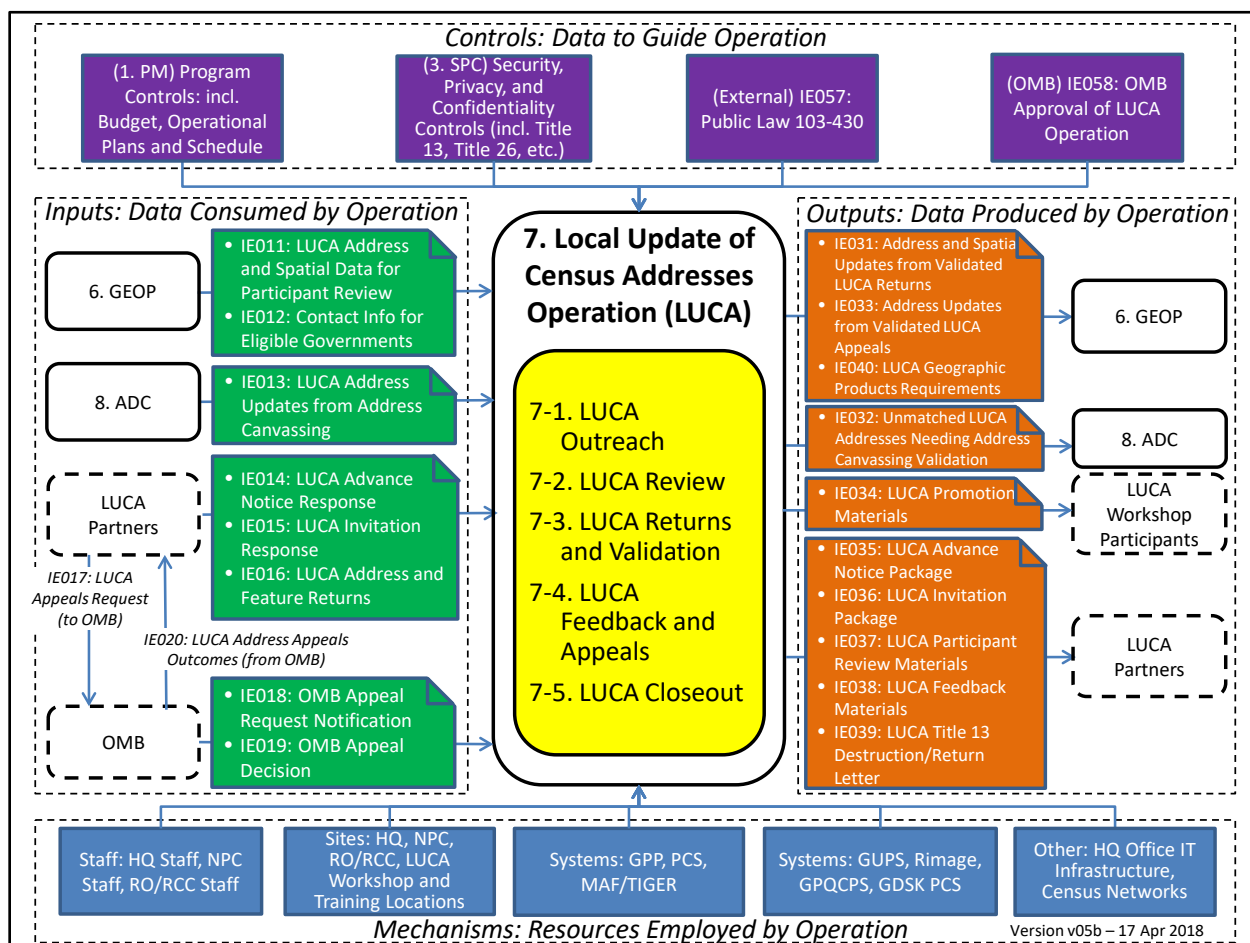


Figure 3: Context Diagram for LUCA Operation Activities

For the LUCA operation, initial Inputs include address and spatial data from the MAF/TIGER System and governmental units' (GUs') contact information from the Geographic Programs Participants (GPP) database. Later in LUCA, Inputs include the returned address and spatial data from participating GUs, as well as the results of the Address Canvassing operation for LUCA address records. At the end of the LUCA, Inputs are the approved LUCA appeals received from the OMB LUCA Appeals Office.

LUCA Controls include basic program controls such as budget and schedule, as well as P.L. 103-430, the law mandating that the Census Bureau conduct an operation such as LUCA, and Title 13 of the U.S.C., which mandates data security, confidentiality, and stewardship practices.

Outputs for LUCA include four separate mailings to participants: the advance notice mailing in early 2017, the invitation mailing in summer 2017, the review materials mailing in early 2018, and the feedback mailing in summer 2019. Additional Outputs include promotional and training materials for LUCA partners, address records for the Address Canvassing operation, as well as updates to the MAF/TIGER system.

Finally, LUCA Mechanisms include the staff at various Census Bureau worksites, such as headquarters (HQ), regional offices (ROs), regional census centers (RCCs), and the National Processing Center (NPC), as well as various systems and databases, such as the GPP, GUPS, Production Control System (PCS), and the MAF/TIGER system.

For detailed descriptions of the Inputs, Controls, Outputs and Mechanisms used by the LUCA operation activities, see the sections that follow.

3.1.2.1 LUCA Operational Inputs

Inputs are the data that are consumed by the operation. The inputs define the amount of operational work that needs to be performed.

Table 1 lists the inputs to the LUCA operation.

Table 1: LUCA Operational Inputs

Provider	Information Exchange	Description
6. Geographic Programs operation (GEOP)	IE011: LUCA Address and Spatial Data for Participant Review	Address and Spatial data from the MAF/TIGER System.

Provider	Information Exchange	Description
6. Geographic Programs operation (GEOP)	IE012: Contact Info for Eligible Governments	Contact Information for LUCA Eligible Governments (State, Local and Tribal).
8. Address Canvassing operation (ADC)	IE013: LUCA Address Updates from Address Canvassing	Results of the Validation of LUCA addresses during IN-Office Address Canvassing, LUCA Address Validation.
LUCA Partners	<ul style="list-style-type: none"> IE014: LUCA Advance Notice Response IE015: LUCA Invitation Response IE016: LUCA Address and Feature Returns 	Correspondence and Data from LUCA Partners including: <ul style="list-style-type: none"> Responses to LUCA Operational Notices Returns for proposed updates to Addresses and Features
	IE017: LUCA Appeals Request (to OMB from LUCA Partners)	Includes correspondence directly from LUCA Partners to OMB: <ul style="list-style-type: none"> Appeals Requests for results from LUCA Feedback Materials
U.S. Office of Management and Budget (OMB)	<ul style="list-style-type: none"> IE018: OMB Appeal Request Notification IE019: OMB Appeal Decision 	Results of OMB Appeal Decision for submitted LUCA Appeals Requests from LUCA Partners. To Census: <ul style="list-style-type: none"> Notifications of pending OMB Appeals Requests Decision outcomes for OMB Appeals
	IE020: LUCA Address Appeals Outcomes (from OMB to LUCA Partners)	Results of OMB Appeal Decision for submitted LUCA Appeals Requests from LUCA Partners. To LUCA Partners: <ul style="list-style-type: none"> Outcomes for LUCA Partner Appeals Requests

3.1.2.2 LUCA Operational Controls

Controls are the data that guide the behavior of the operation. They are not consumed by the operation, but rather they provide guidance, models, limits, criteria, cutoff dates, or other information that controls the way in which the operational work is performed.

Table 2 lists the controls for the LUCA Operation.

Table 2: LUCA Operational Controls

Provider	Information Exchange	Description
1. Program Management operation (PM)	Program Controls	Program Control information including: <ul style="list-style-type: none">• Budget• Operational Plans and Schedule
3. Security, Privacy, and Confidentiality operation (SPC)	Security, Privacy, and Confidentiality Controls	Laws, policies, regulations, and guidelines related to physical security, IT security, data security and privacy and confidentiality impacts, analyses, and processes. These include but are not limited to Title 13, Title 26, and other laws and policies related to protection of personally identifiable information.
External	IE057: Public Law 103-430	Laws governing LUCA activities.
United States Office of Management and Budget (OMB)	IE058: OMB Approval of LUCA Operation	Approval of LUCA operation as provided by OMB.

3.1.2.3 LUCA Operational Outputs

Outputs are the data produced by the operation. The outputs constitute the results of operational work that has been performed. Outputs produced may be used as inputs or controls to other operations.

Table 3 lists the outputs from the LUCA operation.

Table 3: LUCA Operational Outputs

Consumer	Information Exchange	Description
6. Geographic Programs operation (GEOP)	<ul style="list-style-type: none"> • IE031: Address and Spatial Updates from Validated LUCA Returns • IE033: Address Updates from Validated LUCA Appeals • IE040: LUCA Geographic Products Requirements 	Geographic Data outputs including: <ul style="list-style-type: none"> • Address updates resulting from OMB Appeal decisions regarding LUCA Appeals • Requirements for the Geographic Products created for use during LUCA
8. Address Canvassing operation (ADC)	IE032: Unmatched LUCA Addresses Needing Address Canvassing Validation	<ul style="list-style-type: none"> • Unvalidated Addresses for resolution during Address Canvassing. • Updates from LUCA An-Office Validation activities
LUCA Workshop Participants	IE034: LUCA Promotions Materials	Materials to be shared with LUCA Workshop participants during the LUCA Outreach activities.
LUCA Partners	<ul style="list-style-type: none"> • IE035: LUCA Advance Notice Package • IE036: LUCA Invitation Package • IE037: LUCA Participant Review Materials • IE038: LUCA Feedback Materials • IE039: LUCA Title 13 Destruction/Return Letter 	Correspondence and Data sent to LUCA Partners including: <ul style="list-style-type: none"> • LUCA Operational Notices • Addresses and Feature data for LUCA Partner review and feedback

3.1.2.4 LUCA Operational Mechanisms

Mechanisms are the resources (people, places, and things) that are used to perform the operational processes. They include Staff Resources, Infrastructure Sites, and Systems and other Technology Infrastructure.

Staff Resources

Table 4 identifies the Staff Resources employed for the LUCA Operation.

Table 4: Staff Resources Used Within LUCA Operational Activities

Staff Resources	Description/Role
HQ Staff	HQ Staff to manage LUCA Operation and coordinate activities with NPC and LUCA Partners. Includes participation by Geography Division (GEO) staff, DCMD staff, and Field Division Staff.
NPC Staff	<ul style="list-style-type: none">• NPC Staff to conduct and manage the processing of LUCA returns.• NPC Staff the GPSD Help Desk.
RO/ Regional Census Center (RCC) Staff	RO/RCC Staff to support interaction with LUCA Partners.

Infrastructure Sites

Table 5 identifies the Infrastructure Sites employed for the LUCA operation.

Table 5: Infrastructure Sites for LUCA Operational Activities

Infrastructure Site	Description/Role
HQ	HQ Site for Office Work.
NPC	NPC Site for: <ul style="list-style-type: none">• Printing, assembling, and shipping LUCA materials• Receiving LUCA returns• Processing LUCA feature updates• Keying paper address lists• Preprocessing LUCA address updates• Answering calls via the Geographic Programs Support Desk

Infrastructure Site	Description/Role
	<ul style="list-style-type: none"> In-Office Address Canvassing
RO/RCC	RO Site for staff supporting LUCA Partner interaction until staff is transitioned to the RCC.
LUCA Workshop and Training Locations	LUCA Workshop and Training Locations for Outreach and Training activities, which are not Census Bureau facilities.

Systems and other Technology Infrastructure

Table 6 identifies the Systems employed for the LUCA operation.

Table 6: Systems Used Within LUCA Operational Activities

System	Description
Geographic Program Participant (GPP) Database	A Census Bureau database that records information about contact information for governmental units.
Production Control System (PCS)	A Census Bureau system to control and monitor the workflow and progress of materials for program participants. The system will have the same look and feel for all Geographic Partnership Programs.
MAF/TIGER System	A Census Bureau system that provides address and spatial data products for participants and a mechanism for applying updates made by participants.
Geographic Update Partnership System (GUPS)	<p>A Census Bureau software tool that enables the collection of geographic updates from participants.</p> <p>GUPS is provided to the LUCA participants and used to update the LUCA address and spatial data provided for participant review. GUPS allows participants to produce update submission files that are returned to the Census Bureau. GUPS is designed for all levels of user and has customized tools for each update program or project that uses it.</p>
Rimage Disk Publishing	Produces CD/DVD disks.

System	Description
Geographic Programs Quality Control and Plotting System (GPQCPS)	System used for paper map production and quality control.
Geographic Disk Production Control System (GDSK PCS)	CD creation control system.

Other Technology Infrastructure employed for the LUCA operation includes:

- HQ Office IT Infrastructure for conducting LUCA operational work.

Census Bureau Network connectivity for data transmission between operational systems and operational sites.

3.2 LUCA Process Description

Figure 4 is a top-level Business Process Model (BPM) showing the Level 1 activity areas within the LUCA operation. BPMs for the 2020 Census follow industry-standard Business Process Model and Notation (BPMN). An explanation of how to read the BPMN notations and a full-sized copy of all of the BPMN diagrams for this operation are provided under separate cover.

This top-level BPM serves as the Context Model for the LUCA operation. A BPMN Context Model displays the high-level activities within the operation and relationships between them, whereas the IDEF0 Context Diagram shown earlier depicts the boundaries of the operation or activity and the interfaces between the operation or activity and other operations and activities with which it is associated.

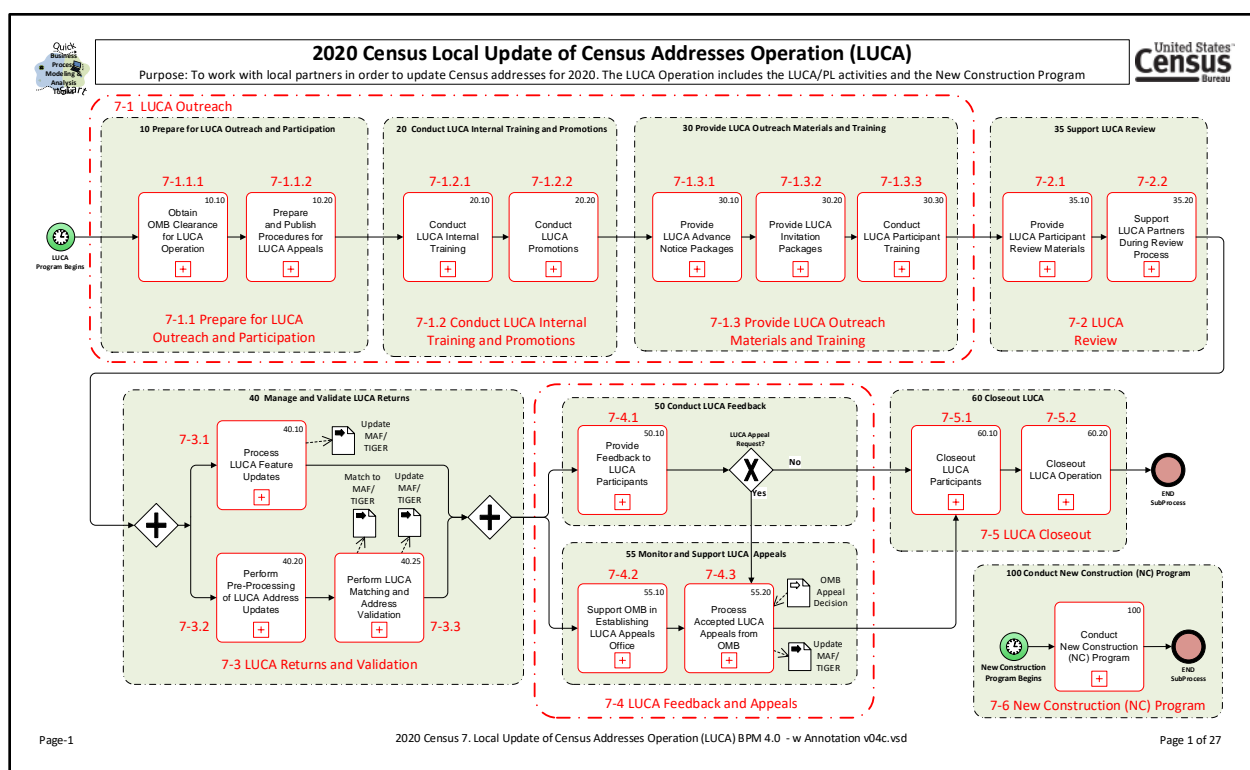


Figure 4: LUCA Operation Context Model

The LUCA operation is subdivided into the following activity areas.

- LUCA Outreach [LUCA 7-1].
- LUCA Review [LUCA 7-2].
- LUCA Returns and Validation [LUCA 7-3].

- LUCA Feedback and Appeals [LUCA 7-4].
- LUCA Closeout [LUCA 7-5].

The business processes for each of these Level 1 activities are discussed along with their inputs and outputs in the following subsections.

3.2.1 LUCA Outreach [LUCA 7-1]

The first LUCA activity is LUCA Outreach. LUCA Outreach includes: Preparing the LUCA materials including the OMB packages, conducting promotional workshops and technical training workshops, sending an advance notice package to potential participants, and sending an invitation package to potential participants.

Figure 5 shows the BPM for the LUCA Outreach [LUCA 7-1] activity (area within the gray rounded rectangle) and its constituent activities within the overall context of the LUCA operation.

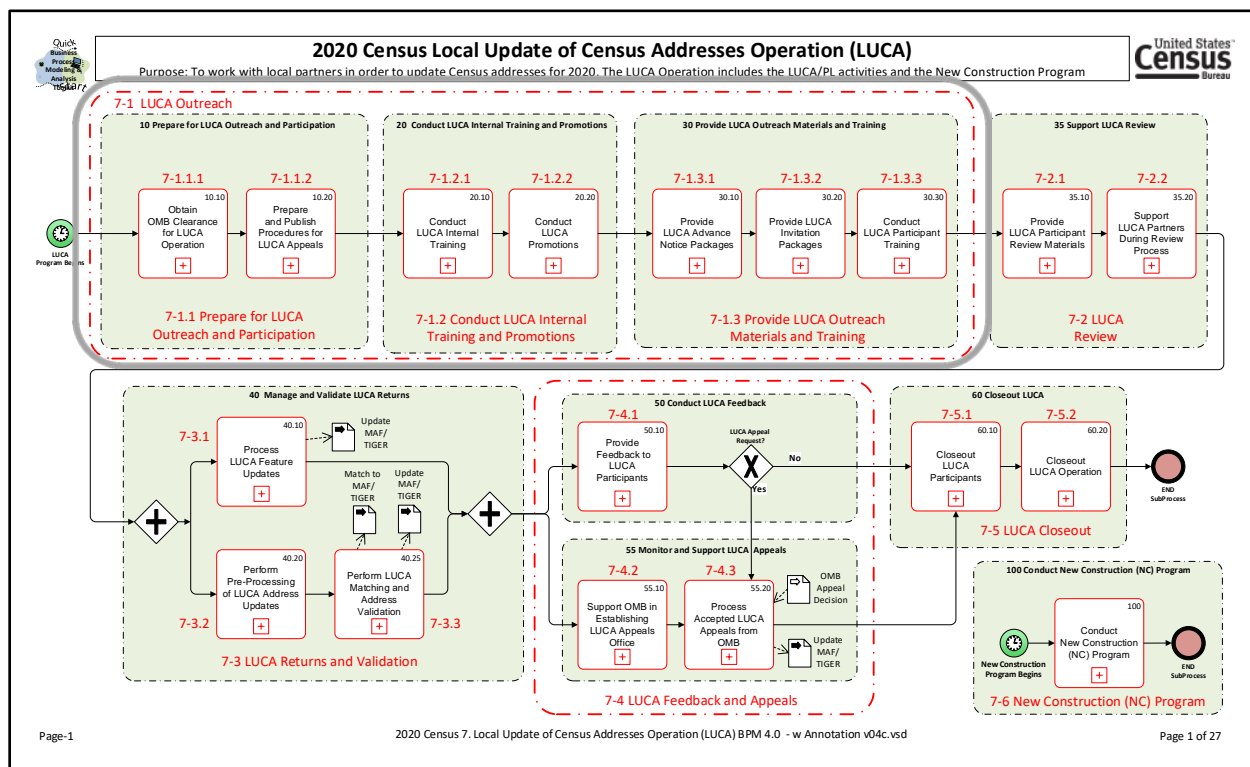


Figure 5: LUCA Outreach [LUCA 7-1] Activities

The LUCA Outreach operational activity is subdivided into the following activity areas:

- LUCA Outreach [LUCA 7-1].
 - Prepare for LUCA Outreach and Participation [LUCA 7-1.1].
 - Conduct LUCA Internal Training and Promotions [LUCA 7-1.2].
 - Provide LUCA Outreach Materials and Training [LUCA 7-1.3].

Preparing for LUCA Outreach and Participation includes completing the OMB clearance process, as well as creating forms, letters, promotional materials, and procedural documents. Census Bureau staff will conduct LUCA promotions and internal training sessions for staff who will field questions from LUCA participants and who will help to process LUCA returns. Once these steps are completed, the Census Bureau will ship promotional and registration materials to potential LUCA participants and will provide training sessions for registered LUCA participants.

Subsequent sections describe the LUCA Outreach operational subactivities in detail.

3.2.1.1 Prepare for LUCA Outreach and Participation [LUCA 7-1.1]

The information to be collected in the LUCA operation is essential to the mission of the Census Bureau and will directly contribute to the successful outcome of the 2020 Census. In order to ensure that the LUCA operation is a success, the Census Bureau will prepare for LUCA outreach and participation by ensuring the many components of the LUCA operation meet specifications and adhere to the scheduled period.

The “Prepare for LUCA Outreach and Participation” operational subactivity is subdivided into the following activity areas.

- Prepare for LUCA Outreach and Participation [LUCA 7-1.1].
 - Obtain OMB Clearance for LUCA Operation [LUCA 7-1.1.1].
 - Prepare and Publish Procedures for LUCA Appeals [LUCA 7-1.1.2].

A detailed view of the activities that make up the “Prepare for LUCA Outreach and Participation” operational subactivity is given in Figure 6, Figure 7, and Figure 8 below.

Obtain OMB Clearance for LUCA Operation [LUCA 7-1.1.1]

Figure 6 below summarizes this activity and Figure 7 provides the details for the process of preparing materials.

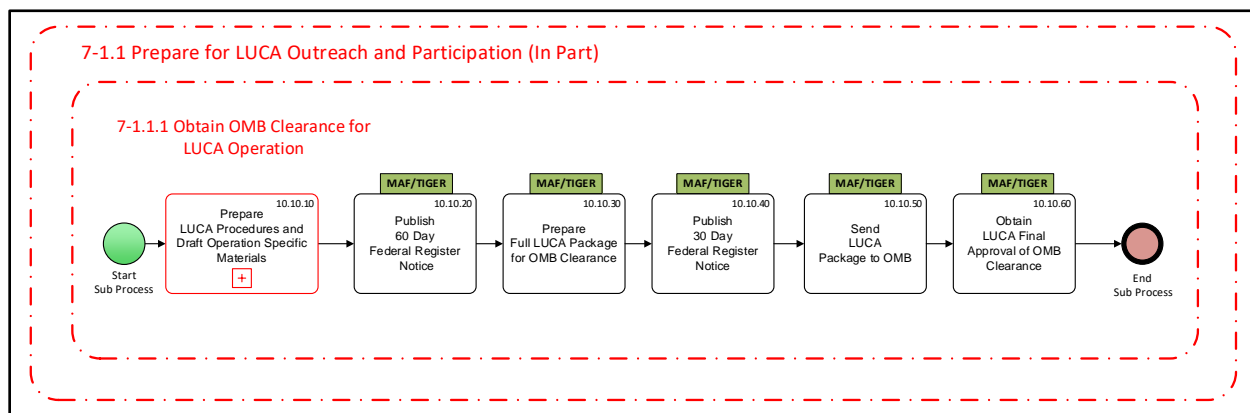


Figure 6: Obtain OMB Clearance for LUCA Operation

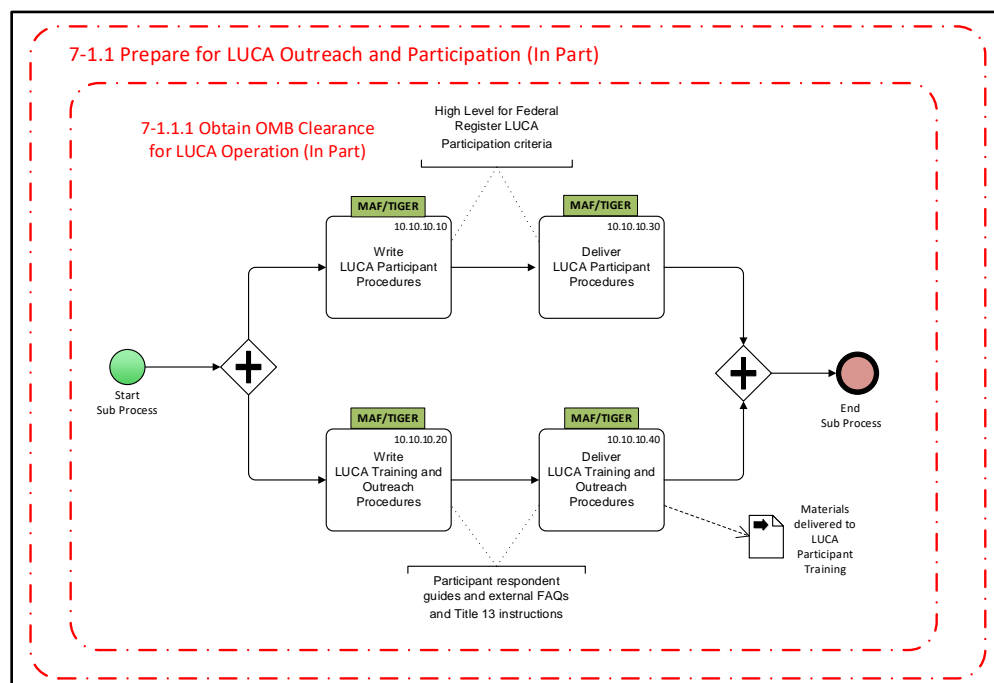


Figure 7: Prepare LUCA Procedure and Draft Operation Specific Materials

In late 2015, the Census Bureau initiated the process to acquire OMB approval for the 2020 Census LUCA operation. The Census staff began developing the LUCA procedures and the program specific materials for the LUCA operation. The LUCA operation consists of four user guides:

- A user guide with instructions for updating the LUCA digital address lists, and digital or paper maps.

- A user guide with instructions for updating the LUCA paper address lists, and digital or paper maps.
- The GUPS user guide for those participants who choose to update their LUCA addresses and shapefiles using the Census Bureau's self-contained GIS update and processing package.
- A Spanish version of the digital address list user guide for governments in Puerto Rico.

There are also four reminder letters, as well as several different forms and inserts that participants receive during the LUCA review phase. These include:

- D-2012 destruction or return of Title 13 materials form.
- D-2014 packing slip.
- D-2015 block insert.
- D-2079 no changes or updates to materials form.

The Census Bureau also sent out email blasts to participants meeting certain criteria after the LUCA review materials were shipped from NPC, giving GUPS participants information to resolve previously undiscovered issues with their digital address list data. These included steps to view ungeocoded addresses in GUPS, as well as steps to ensure that all addresses are included in their GUPS export submissions.

The OMB approved these correspondences and granted approval to send other correspondences as needed moving forward.

In addition, the program specific materials were developed for the Advance Notice Materials and for the Invitation Materials as described below:

- **Advance Notice Materials**

The Census Bureau staff write the LUCA Advance Notice Letter outlining

- The importance of the LUCA operation.
- The LUCA information booklet that provides an overview of the LUCA operation.
- The contact information update form that shows the contact information the Census Bureau currently has on file for the highest elected officials (HEOs) and other government staff.

If there are updates to the form, the HEOs and other government contacts are instructed to update the form and return it to the Census Bureau. Accurate contact names and addresses are essential in order for the Census Bureau to convey timely information to the governments regarding Census Bureau programs.

- **Invitation Materials**

The Census Bureau finalizes the invitation letter and registration materials that will be sent to the HEOs of eligible governments, formally inviting them to participate in the LUCA Operation. In addition to the invitation letter and the various registration forms, the invitation package includes a computer-based training CD/DVD, and a sample GUPS CD/DVD (the Census Bureau's Geographic Update Partnership Software), to familiarize the governments with the LUCA Operation, the operation materials, and how to make address and feature updates. The eligible governments are instructed to return the registration materials, indicating whether they are participating in the LUCA Operation.

Once the invitation materials are approved, the Census Bureau staff contacts the ACSO for the formatting and printing of the materials. During this same period, the Census Bureau staff must write, and contract for printing, the technical training participant workbook and instructor's guide. Census Bureau staff ensure that the training materials workbooks are not excessively detailed, and equally cover both the paper and digital formats. After the materials are printed, the contracted printer mails the materials to the ROs so they have them available for the training workshops.

The Census Bureau must provide an abstract of the LUCA Operation to the OMB for publication in the Federal Register Notice. The Federal Register Notice provides an overview of the LUCA Operation and offers the public an opportunity to comment. The LUCA Federal Register Notice is posted to solicit public comment for 60 days. After the 60-day comment period ends, the Census Bureau considers the public comments that have been submitted and makes any revisions the Census Bureau believes are necessary or desirable.

The Census Bureau staff prepare the OMB full clearance package. The OMB clearance package is the set of LUCA forms and other required documents sent to OMB for approval.

Another Federal Register Notice offers an additional 30-day comment period for the LUCA process.

When all final changes and corrections to the LUCA OMB package are completed, the LUCA OMB package is sent for final approval to OMB. Finally, the Census Bureau receives final OMB clearance.

Prepare and Publish Procedures for LUCA Appeals [LUCA 7-1.1.2]

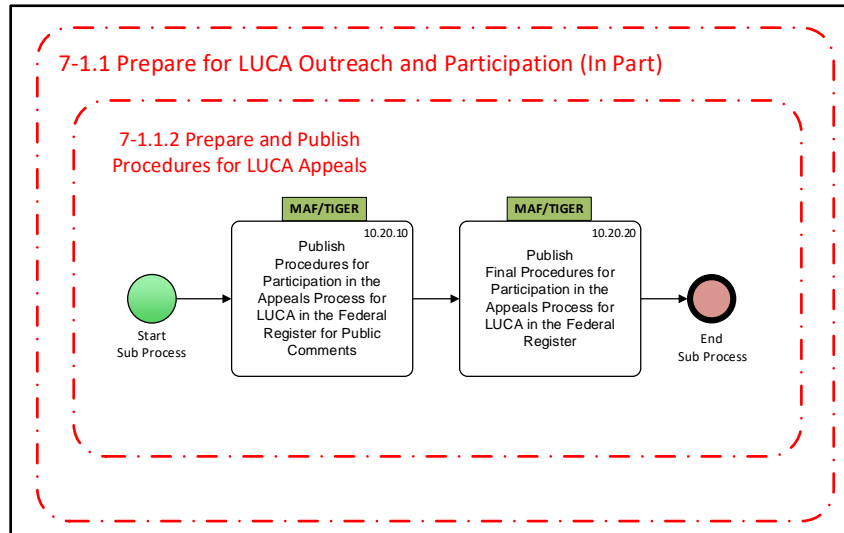


Figure 8: Prepare and Publish Procedures for LUCA Appeals

By August 2019, the LUCA OMB Appeals Office will prepare and publish the appeal procedures for the LUCA Operation. A separate Spanish version of the appeal procedures will be provided for participants in Puerto Rico.

3.2.1.2 Conduct LUCA Internal Training and Promotions [LUCA 7-1.2]

The “Conduct LUCA Internal Training and Promotions” operational subactivity is subdivided into the following activity areas.

- Conduct LUCA Internal Training and Promotions [LUCA 7-1.2].
 - Conduct LUCA Internal Training [LUCA 7-1.2.1].
 - Conduct LUCA Promotions [LUCA 7-1.2.2].

A detailed view of the activities that make up the “Conduct LUCA Internal Training and Promotions” operational subactivity is given in Figure 9 and Figure 10 below.

Conduct LUCA Internal Training [LUCA 7-1.2.1]

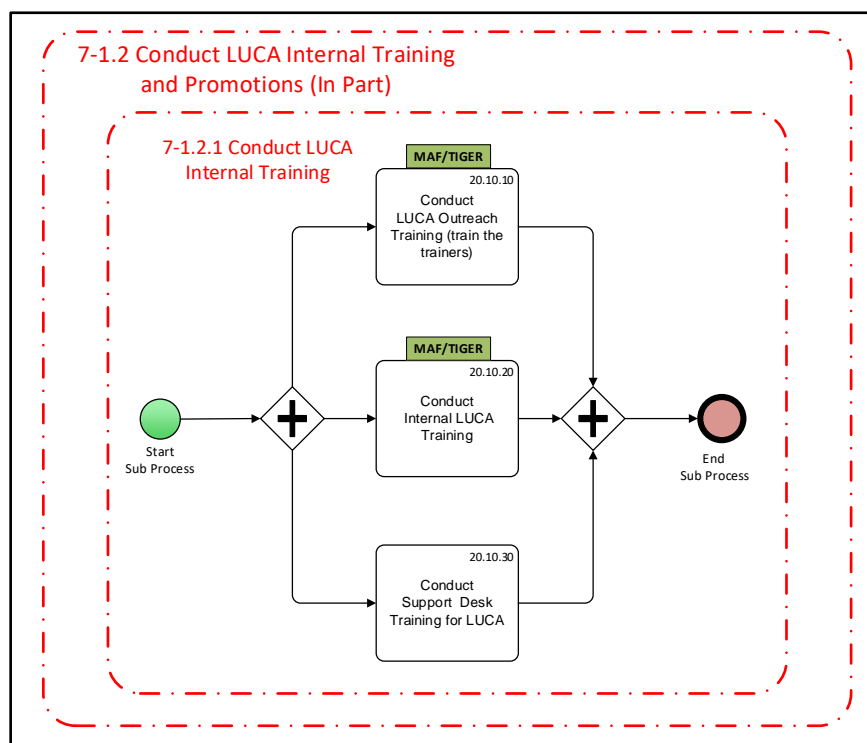


Figure 9: Conduct LUCA Internal Training

Advance Notice Promotional Training for the ROs

Before the RO staff conducts the promotional workshops, HQ staff will conduct “train the trainer” sessions with the RO staff to review the instructor and participant workbooks and discuss any questions the ROs may have concerning the workbooks and promotional training. The Census Bureau staff may conduct the RO “train the trainer” sessions in person, by videoconferencing, or through WebEx.

Invitation/Registration Technical Training for the ROs

Before the RO staff conducts the technical training workshop sessions, HQ staff will conduct “train the trainer” sessions with the RO staff to review the instructor and participant materials and discuss any questions the ROs may have concerning the materials and the technical training. The Census Bureau staff may conduct the RO “train the trainer” sessions in person, by videoconferencing, or through WebEx.

Conduct LUCA Promotions [LUCA 7-1.2.2]

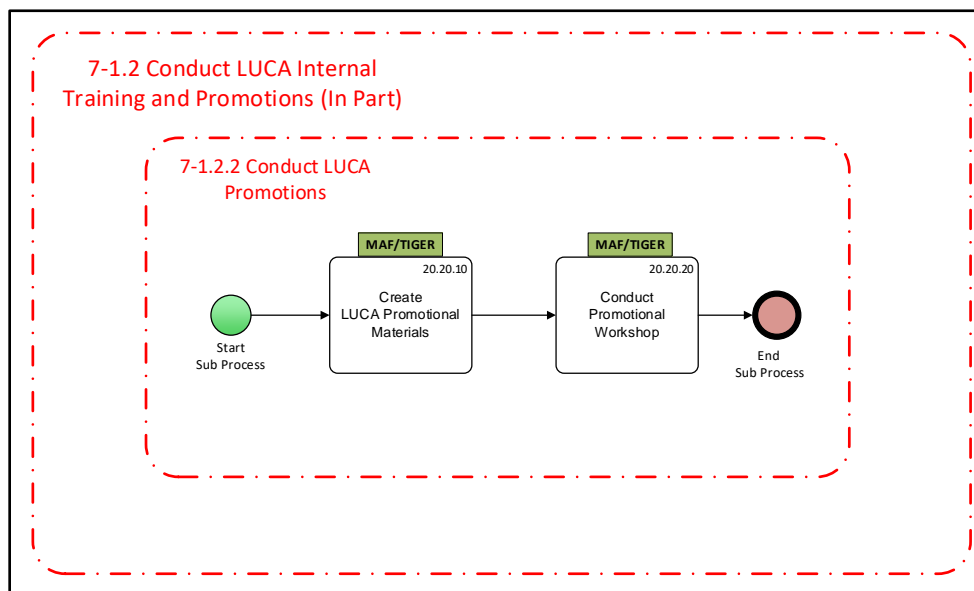


Figure 10: Conduct LUCA Promotions

Advance Notification Promotional Workshop

After the LUCA Advance Notification packages are mailed, the Census Bureau offers promotional workshop sessions to governments interested in participating in the LUCA Operation. The promotional workshops may be held at a meeting site convenient for the eligible participants, by videoconferencing, or by a webinar on the internet. The workshops cover the LUCA review schedule and explain the purpose and importance of the LUCA Operation. The information provided by the promotional workshops may help a government decide whether they have the time and resources to participate in the operation. If a government determines they do not have the time or resources, the Census Bureau will inform the governments that some state data centers and regional planning commissions may be interested in conducting their LUCA review on their behalf.

Invitation/Registration Training

Following the Census Bureau's receipt of the registration materials and update of the GPP and PCS, the Census Bureau will offer LUCA technical training workshops to governments interested in participating in the LUCA Operation. The technical training workshops may be held at a meeting site convenient for the registered participants, by videoconferencing, or by a webinar on the internet. The training workshops will provide the participants with detailed instructions and examples on how to review/update and return their LUCA submissions to the Census Bureau.

3.2.1.3 Provide LUCA Outreach Materials and Training [LUCA 7-1.3]

The “Provide LUCA Outreach Materials and Training” operational subactivity is subdivided into the following activity areas.

- Provide LUCA Outreach Materials and Training [LUCA 7-1.3].
 - Provide LUCA Advance Notice Packages [LUCA 7-1.3.1].
 - Provide LUCA Invitation Packages [LUCA 7-1.3.2].
 - Conduct LUCA Participant Training [LUCA 7-1.3.3].

A detailed view of the activities that make up the “Provide LUCA Outreach Materials and Training” operational subactivity is given in Figure 11, Figure 12, and Figure 13 below.

Provide LUCA Advance Notice Packages [LUCA 7-1.3.1]

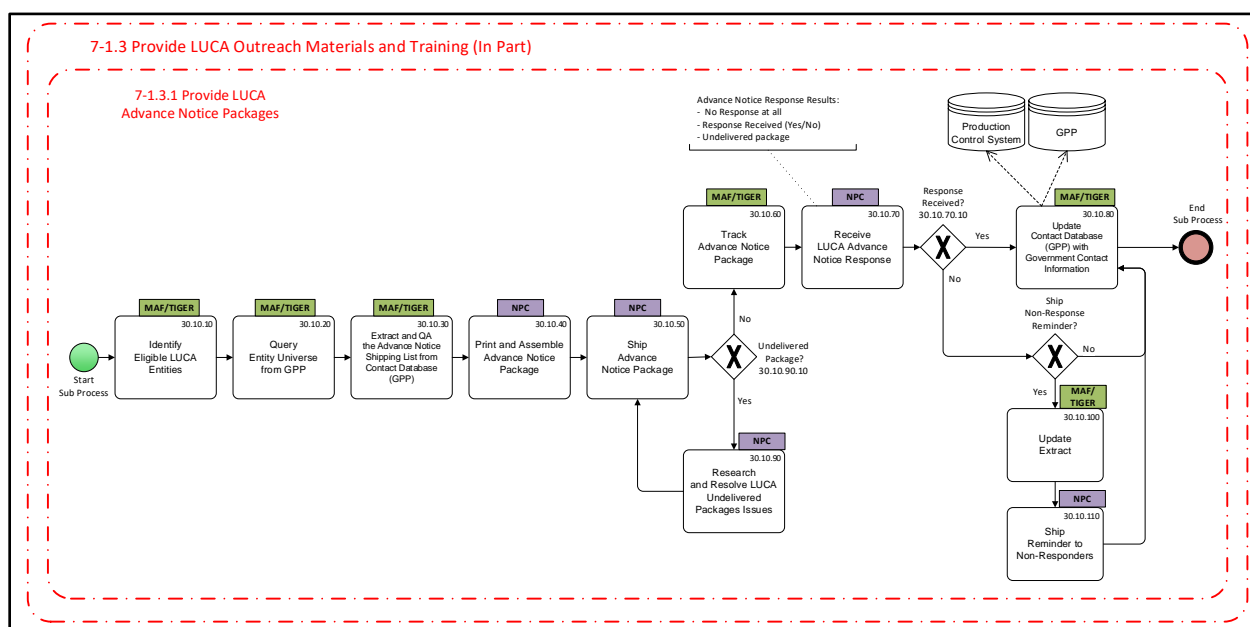


Figure 11: Provide LUCA Advance Notice Packages

In 2016, staff in the Geography Division (GEO) develops materials for the LUCA advance notice phase. Once the advance notice materials are approved by GEO and DCMD management, the GEO staff contacts the Administrative and Customer Services Division (ACSD) for the formatting and printing of the materials. During this same period, the Census Bureau staff must write the promotional participant workbooks and instructor guides. The GEO staff ensures that the participant workbooks are not excessively detailed. After the promotional materials are printed, NPC mails the materials to the ROs for promotional workshops.

In addition to developing advance notice and promotional materials, Census Bureau staff also develops a public geocoding tool. Potential LUCA partners can use the tool to load their own residential address list into the Census Bureau's geocoding tool to generate a count of residential addresses by block and compare it to the Census Bureau's count of residential addresses by block. This allows potential LUCA partners to see where the Census Bureau's residential address count differs from their own and to assess their need to participate in the LUCA operation.

In early 2017, the Census Bureau staff coordinates with the NPC to send an Advance Notice package to approximately 39,000 tribal, state and local governments. This package informs the HEO and selected GU officials of the upcoming LUCA Operation. These GU officials will include the Boundary and Annexation Survey and/or previous LUCA contacts in the LUCA Operation universe. The Advance Notice package will also explain the LUCA operation to those officials and provide them an opportunity to inform the Census Bureau of HEO changes and other contact information updates.

The Advance Notice Mailing operation consists of two waves. There is an initial mailing to all 39,000 active GUs and later a supplemental mailing to all GUs that did not respond to the initial mailing. The initial mailing package consists of:

(The following materials are in English except for Puerto Rico GUs, which are in Spanish)

- One of these letters announcing the LUCA Operation.
 - Letter to State HEOs.
 - Letter to tribal and local GU HEOs and Courtesy Copy (CC)s.
 - Letter to Regional Planning Agencies, Councils of Governments (COG), and similar interested parties.
- An HEO Information Update Form allowing the GU to provide contact information.
- A Contact Information Update Form allowing the GU to provide contact information.
- A flyer explaining the LUCA operation.
- An address count list showing the number of housing units and group quarters in every census block in the GU.
- A postage-paid return envelope.

All letters, the Address Count List, and Contact Information Update Forms have individualized information printed on them. The two information sheets are generic pieces printed by NPC, which is responsible for storing the flyers until the assembly of the Advance Notice Mailing

packages. Several months later, the NPC reships the Advance Mailing package to any GUs that have not yet responded.

To facilitate the creation and shipment of both packages, the Census Bureau staff generates production files for all printed materials and Master Address File (MAF) extracts for each mailing. The extracts contain entity names and codes, HEO and contact names and mailing information, and codes denoting which letter and Contact Information Update Form to print for each GU. The Census Bureau staff places the extract files and the files for the printed materials on a server accessible to the NPC. The Census Bureau staff notifies the NPC of the server name, the location of the materials, the directory structure, and the naming conventions. In addition, the Census Bureau staff provides specific instructions to the NPC regarding any overprinting.

The NPC uses these files to determine which materials each GU will receive, print the materials, assemble them into a complete package, and ship the package. The NPC conducts a Quality Control process at each step of the operation. After shipment, the NPC enters the appropriate information into the PCS.

Printing Materials

Before both printing dates, the Census Bureau staff provides the NPC with product dimensions and paper/envelope needs for the shipments. The printing information is provided in time to allow the NPC to acquire the needed supplies. The NPC is responsible for acquiring these supplies.

Two weeks before the initial print date, the Census Bureau staff provides the NPC with a test address file and sample Contact Information Update Form to test the printing. The NPC prints the test files and provides the results to the Census Bureau staff. Upon approval of the test run, the Census Bureau staff delivers the actual production version of the address file and the LUCA Advance Notice letters, Address Count List, and Contact Information Update Form files.

Approximately two months after the initial mailing, the Census Bureau staff provides the NPC with a test address file and sample materials to test the printing of a follow-up shipment. The NPC prints the test files and provides the results to the Census Bureau staff. Upon approval of the test run, the Census Bureau staff delivers to the NPC a second extract file that contains the names and addresses for the HEOs and LUCA contacts that have not returned a Contact Information Update Form. This extract will include codes for each record in the file to indicate the appropriate Advance Notice Mailing materials.

Once the Census Bureau staff approves the test materials, the NPC prints all the materials in such a way as to print as many of a GU's materials together and save assembly time. In addition, during printing the NPC uses the forms and procedures supplied by the Census Bureau staff to

check the printed materials to ensure that the print quality is consistently good and that all information is on each page. After finishing printing, the NPC assembles the materials into the finished package.

Assembling Materials

For both mailings, the NPC moves the collated printed materials—the letter, the Address Count List, and the Contact Information Update Forms—to the assembly area. The NPC uses the procedures and forms sent by the Census Bureau staff to determine the appropriate flyer (English or Spanish), and inserts that and the postage-paid return envelope along with the collated materials into the outgoing envelope.

Shipping Materials

At shipping, the NPC uses an extract of address from the MAF provided by the Census Bureau staff to generate mailing labels. The NPC attaches the labels to the appropriate package. The NPC inspects a sample of the outgoing LUCA operation Advance Notice Mailing packages to ensure that the LUCA recipient receives the appropriate notification letter, Address Count List, Contact Information Update Forms, and return envelope.

The NPC then seals and ships the packages. The NPC must ship all packages within 24 hours of packaging. Staff at the NPC enters the date shipped into the PCS. The NPC maintains a report/spreadsheet of all undeliverable packages and provides the report to the GEO Address Data Collection and Products Branch (ADCPB) weekly. For each undeliverable mailing piece in the report, the NPC includes the GU name, variable 12-digit GU code, date returned, reason for the return, and a tally of the total number of undeliverable packages.

Provide LUCA Invitation Packages [LUCA 7-1.3.2]

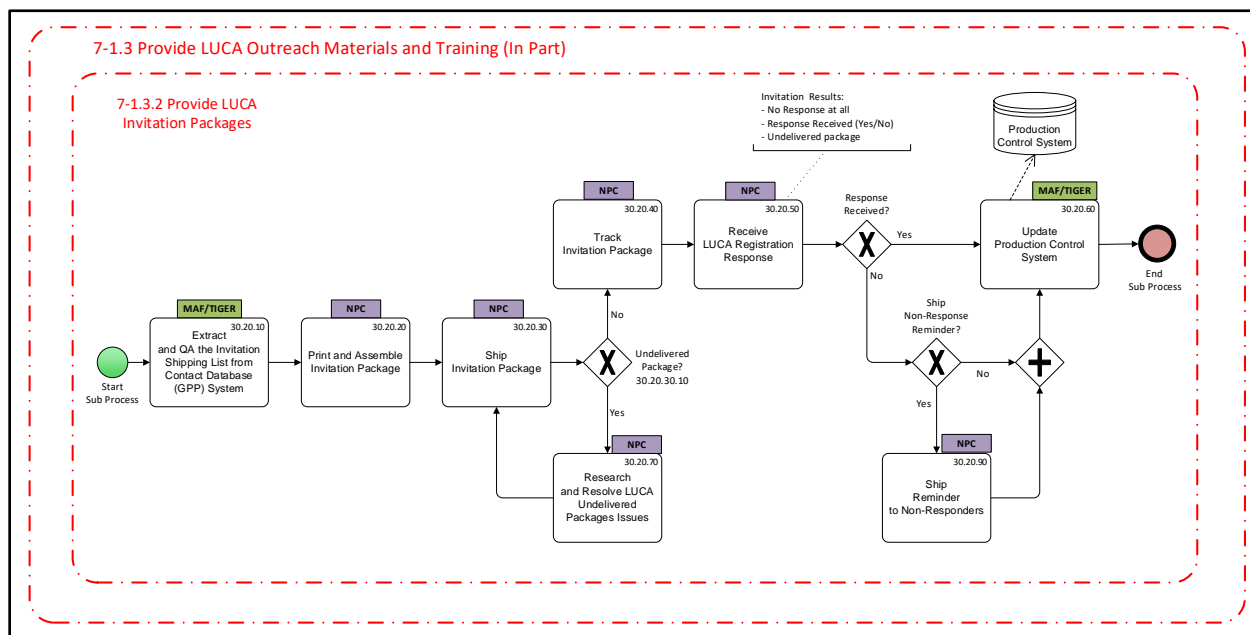


Figure 12: Provide LUCA Invitation Packages

In the summer of 2017, the Census Bureau staff coordinates with the NPC to send a LUCA operation Invitation package to approximately 39,000 state, local, and tribal governments. This package will explain the LUCA operation to the GU and inform the HEO and selected interested parties of the beginning of the LUCA operation registration period. It will also invite the GU to participate in the LUCA operation and allow the HEO to fill out the registration forms for the LUCA operation.

This activity consists of four waves:

- The initial invitation shipment to all active GUs.
- A reminder letter.
- A reminder postcard.
- A closeout letter.

The initial shipment goes to the HEO and selected interested parties of all 39,000 active GUs. The content of the invitation packages varies depending on the title of the person receiving it (only the HEO will receive the registration form and other registration materials). Puerto Rico GUs receive Spanish letters and forms. All other GUs receive English letters and forms.

However, each individual will get the same package for both shipments. The package consists of some combination of the following:

- One of these letters inviting GUs to participate in the LUCA Operation.
 - Invitation letter to local and tribal HEOs and CCs.
 - Invitation letter to state governors and CCs.
 - Invitation announcement to planning agencies, Council of Governments, State Data Centers, Federal-State Cooperative Program for Population Estimates (FSCPE), etc. that their member governments have been invited to participate in the LUCA Operation.
- Registration form for HEOs only. (This will be in either English or in Spanish for Puerto Rico GUs.)
- Product Preference Form for local and tribal HEOs. This allows local and tribal HEOs to select the media for their materials (either the GUPS, digital or paper maps, digital or paper address lists if the GU has 6,000 or fewer addresses). State HEOs receive a separate form.
- GIS Preference/County Selection Form to State HEOs only, which allows state HEOs to select either GUPS or digital and address lists.
- Confidentiality and Security Guidelines to HEOs only.
- Confidentiality Agreement Form to HEOs only.
- Self-Assessment Security Checklist to HEOs only.
- Flyer with a brief overview of the LUCA operation.
- “Reason Why Not Participating” checklist.
- Prepaid Return Shipping container.

All letters and forms have individualized information printed on them. The Confidentiality and Security Guidelines are generic. The booklet and the training CD/DVD are generic pieces printed by and shipped by NPC, which is responsible for storing them until the assembly of the LUCA Invitation Mailing packages.

In September 2017, the NPC ships a first reminder letter to the HEO and selected CCs of all GUs that did not respond to the initial mailing. The second reminder letter is sent from NPC to all GUs that have not yet responded in November 2017.

The fourth shipment is a closeout letter sent to HEOs and CCs of all nonresponding GUs, notifying them that they have little time left to register for the LUCA Operation. If they do not respond by the registration cutoff date, the Census Bureau considers them closed out of the LUCA Operation and does not create LUCA address or spatial data for their GU.

To facilitate the creation and shipment of all packages, the Census Bureau staff generates production files for all printed materials and extracts for each mailing. The extracts contain GU names and codes, HEO and contact names and shipment information, and codes denoting which letter and other materials to print for each GU.

The Census Bureau staff places the extract files and the files for the printed materials on a server accessible to the NPC. The Census Bureau staff notifies the NPC of the server name, the location of the materials, the directory structure, and the naming conventions. In addition, the Census Bureau staff provides specific instructions to the NPC regarding any overprinting. The NPC uses these files to determine which materials each GU receives, print the materials, assemble them into a complete package, and ship the package. The NPC conducts a Quality Assurance process at each step of the operation. After shipment, the NPC enters the appropriate information into the PCS.

Printing Materials

Before all printing dates, the Census Bureau staff provides the NPC with product dimensions and paper, envelope, and other needs for shipment. The Census Bureau staff provides this information approximately one month before shipping to allow the NPC to acquire the needed supplies. The NPC is responsible for acquiring these supplies.

The Census Bureau staff provides to the NPC a test address file, a written sample, and digital materials to test the printing. After the NPC conducts the test and Census Bureau staff approves, the Census Bureau staff delivers the actual production version of the address file and the LUCA operation Invitation printed materials. The NPC prints all the materials in such a way as to print as many of a GU's materials together and so save assembly time. The Census Bureau staff and NPC follows this procedure for all mailings.

In addition, during printing the NPC uses the forms and procedures supplied by the Census Bureau staff to check a specified percentage of the printed materials to ensure that print quality is consistently good and that all required information is on each page. After finishing printing, the NPC assembles the materials into the finished package.

Assembling Materials

For all shipments, the NPC moves the collated printed materials and the stored CD/DVDs to the assembly area. The NPC uses the procedures and forms sent by the Census Bureau staff to determine the appropriate materials (English or Spanish and HEO and contacts) and inserts them and the postage-paid return envelope along with the collated materials into the outgoing package.

Prior to sending the packages to shipping, the NPC must inspect a sample of the outgoing packages to ensure that the packages contain the appropriate invitation materials.

Shipping Materials

At shipping, the NPC uses a MAF extract of addresses provided by the Census Bureau staff to generate shipment labels. The NPC attaches the labels to the appropriate package.

The NPC inspects a sample of the outgoing LUCA Operation Invitation packages to ensure that the LUCA recipient receives the appropriate invitation letter, other forms, the training CD/DVD, and the return envelope. In addition, NPC ensures that the label matches the materials inside.

The NPC ships within 24 hours of packaging, using a shipping company that has a tracking system capable of locating the package and notifying the NPC of the delivery date and the signature of the person accepting delivery. Staff at the NPC enters the date shipped and the date received into the PCS.

Conduct LUCA Participant Training [LUCA 7-1.3.3]

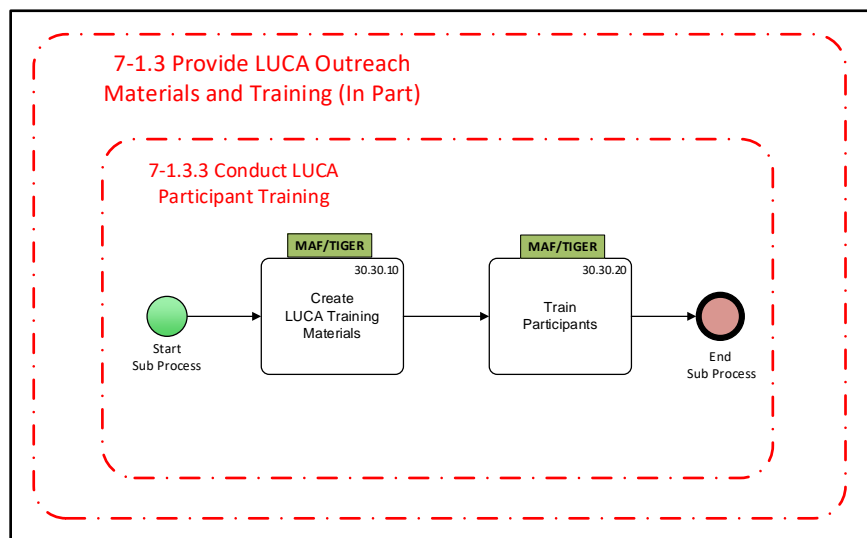


Figure 13: Conduct LUCA Participant Training

In order to conduct LUCA participant training sessions, Census Bureau staff first creates training materials such as PowerPoint presentations and accompanying scripts. Then, Census Bureau staff holds internal “train-the-trainer” sessions to instruct RO staff on how to conduct training the LUCA participants. The Census Bureau staff may conduct the participant training in person, by videoconferencing, or through WebEx. In addition, Census Bureau staff conducts LUCA participant training sessions close to when GUs receive their LUCA review materials.

3.2.2 LUCA Review [LUCA 7-2]

During LUCA Review, tribal, state, and local participants have 120 calendar days to review the Census Bureau’s address list and maps for their GU and provide corrections to the address list and maps on paper or digital files.

Figure 14 shows the BPM for the LUCA Review [LUCA 7-2] activity (area within the gray rounded rectangle) and its constituent activities within the overall context of the LUCA Operation.

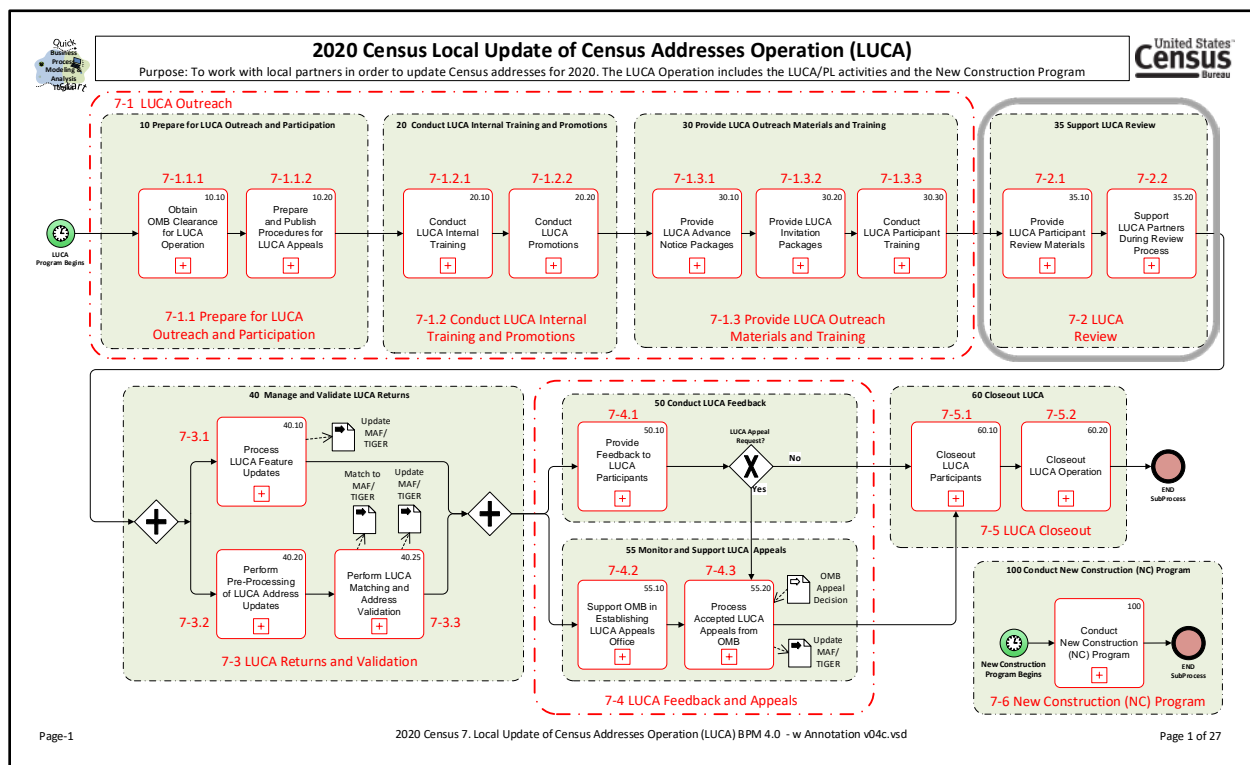


Figure 14: LUCA Review [LUCA 7-2] Activities

The LUCA Review operational activity area is subdivided into the following activities:

- LUCA Review [LUCA 7-2].
 - Provide LUCA Participant Review Materials [LUCA 7-2.1].
 - Support LUCA Partners During Review Process [LUCA 7-2.2].

A detailed view of the activities that make up the LUCA Review operational activity is given in Figure 15 and Figure 16 below.

Subsequent sections describe the LUCA Review operational subactivities in detail.

3.2.2.1 Provide LUCA Participant Review Materials [LUCA 7-2.1]

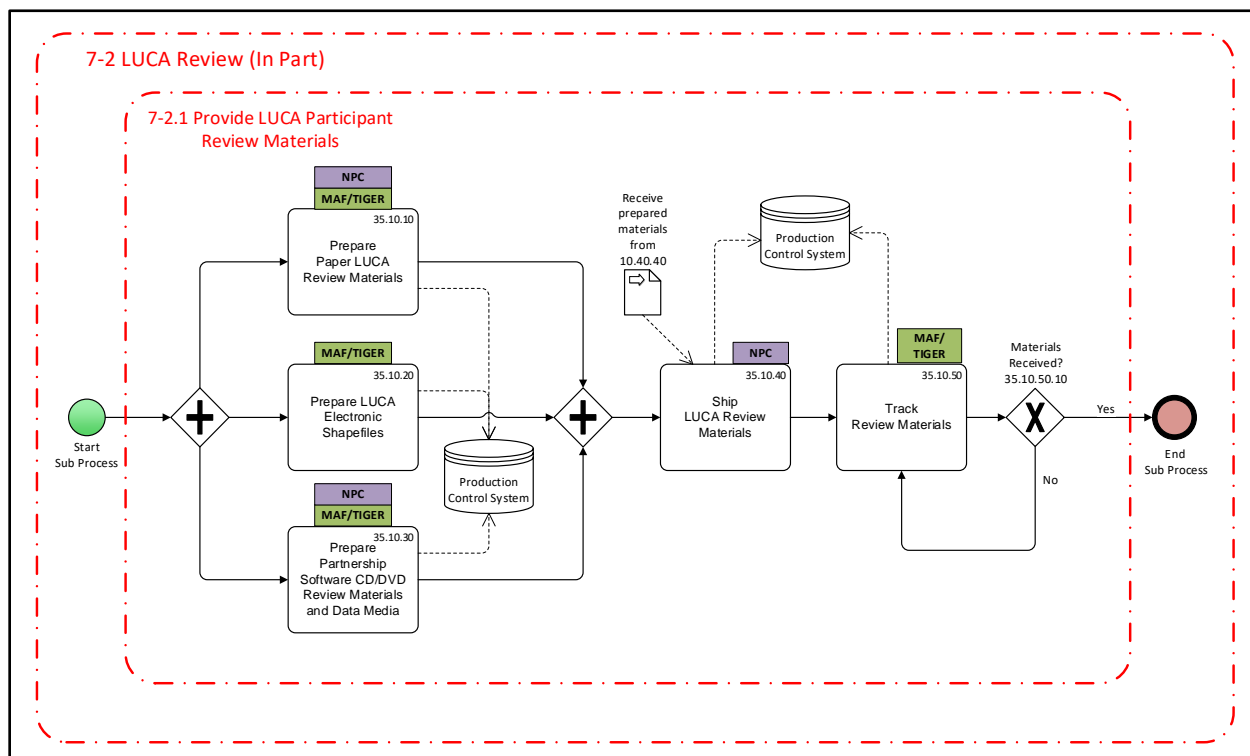


Figure 15: Provide LUCA Participant Review Materials

In early 2018, the Census Bureau staff coordinates with the NPC to ship a Review Materials package to the state, local, and tribal governments that registered for the LUCA Operation. This package includes the address and mapping materials needed to complete the LUCA operation and the associated materials explaining how to use these materials, and it may include software the participant can use to conduct their LUCA review.

Participants review the materials and provide the Census Bureau with any updates. Should the participants have additional questions, they can refer to the LUCA operation Online Frequently Asked Questions (FAQ) or personally contact the Geographic Programs Support Desk at NPC.

The LUCA operation Review Materials production and shipping operation consists of three activities:

- The initial materials shipment.
- The password letter shipment.
- The reminder letter shipments (30-day and 90-day reminders).

The initial shipment to the LUCA operation Liaisons for all participating GUs can include both printed materials and digital materials created using the Rimage system. Participants can select a combination of paper and digital materials.

The complete initial package consists of the following materials (in English except for Puerto Rico GUs, which are in Spanish):

- Inventory Checklist.
- D-2012 Destruction or Return of Title 13 Materials Form.
- D-2079 No Changes or Updates to Materials Form.
- D-2031, 2032, 2033 2020 LUCA User Guide –
 - For paper Address List materials.
 - For digital Address List materials.
 - For GUPS users.
- D-2015 block insert
- D-2014 Prepaid shipping envelope
- Set of Address/Map Materials—Either:
 - GUPS—The GUPS is a set of two CD/DVDs, one containing a Census Bureau GIS software program and the other containing the Address List, Address Count List and shapefiles for the GU.
- Or, a choice of:
 - Address List Materials—either
 - D-2007, 2008, 2009 Paper Address List, Address Count List, and Add Page.
 - Digital Address List.
 - Maps—either
 - Shapefiles.
 - Set of paper maps and Map Sheet to Block Number Relationship List (D-2010).

Some materials have individualized information printed on them; others, like the user guide, are generic. The booklet and the GUPS program CD/DVD will be generic pieces created in NPC, which is responsible for storing them until the assembly of the LUCA Review Materials Mailing packages.

To facilitate the creation and shipment of all packages, the Census Bureau staff generates production files for all printed and electronic materials. The mailing extracts for the shipments contains entity names and codes, LUCA Liaison names and shipment information, and codes denoting which materials to print for each GU. The Census Bureau staff places the extract files and the files for the printed materials on a server accessible to the NPC. The Census Bureau staff notifies the NPC of the server name, the location of the materials, the directory structure, and the naming conventions. In addition, the Census Bureau staff will provide specific instructions to the NPC regarding any overprinting.

The NPC uses these files to determine which materials each GU will receive, print the paper materials, create and label the digital materials, assemble all necessary materials into a complete package, and ship the package. The NPC conducts a Quality Assurance process at each step of the operation. After shipment, the NPC enters the appropriate information into the PCS.

During this initial mailing, the NPC also ships a separate letter to participants receiving digital address lists or the GUPS informing them of the password needed to access their materials, as well as a token to register for the Secure Web Incoming Module (SWIM) to submit their digital response. The Census Bureau staff provides NPC with the production file for this package on an accessible server. The NPC uses this information to print the forms and address labels, insert the materials into envelopes, label the envelopes, conduct a quality assurance process, and seal and mail the envelopes.

Approximately 30 days and 90 days after the start of the initial shipment, the third and fourth shipments go out, respectively. These are a reminder sent to all participating GUs that the deadline for returning the updated LUCA materials is approaching. It consists of a letter in English, either for most GUs, or in Spanish, for Puerto Rico GUs. These reminders are sent by email to all LUCA Liaisons meeting certain criteria, or by mail to those LUCA Liaisons that do not have email addresses.

Below is a list of all reminder letters sent to participants:

- D-2081 30-day reminder.
- D-2082 90-day reminder.
- D-2084 submission due reminder.
- D-2087 reminder to destroy or return materials.

The Census Bureau staff provides an extract containing address information and shipping codes to NPC. The NPC uses this to email or print and ship the letters.

Printing Materials

Before all printing dates, the Census Bureau staff provides the NPC with product dimensions along with paper, envelope, CD/DVD, and other needs for shipment. The Census Bureau staff provides this information in time to allow the NPC to acquire the needed supplies. The NPC is responsible for acquiring these supplies.

The Census Bureau staff provides to the NPC a test address file and sample materials to test the printing. The NPC conducts a test run and submit the results to the Census Bureau staff. Once the Census Bureau staff has approved the test materials, the Census Bureau staff delivers the actual production version of the address file and the LUCA Operation printed and digital materials. The NPC prints all the materials in such a way as to print as many of a GU's materials together and so save assembly time.

In addition, during printing the NPC uses the forms and procedures supplied by the Census Bureau staff to check a specified percentage of the Address List and Address Count Lists to ensure that print quality is consistently good and that all required data are on each page (e.g., to check for pages with missing columns or rows of data).

After finishing printing, the NPC assembles the materials into the finished package.

Assembling Materials

For all shipments, the NPC moves the collated printed materials and digital materials to the assembly area. The NPC uses the procedures and forms sent by the Census Bureau staff to determine the appropriate materials (English or Spanish, etc.) and insert them and the postage paid return shipping materials along with the collated materials into the outgoing package.

There may be more than one package per shipment, however all packages in a GU's shipment must be sent at the same time.

Before sealing and shipment of the packages, the NPC must inspect a sample of the outgoing packages to ensure that the recipient receives the appropriate materials. The NPC will then move the unsealed packages to shipping.

Shipping Materials

At shipping, the NPC uses an extract provided by the Census Bureau staff to generate shipment labels. The NPC attaches the labels to the appropriate package.

The NPC inspects a sample of the outgoing LUCA Operation Review Materials packages to ensure that the participant receives the appropriate materials. In addition, NPC inspects 100 percent of the packages to ensure that the label matches the Title 13 materials inside.

The NPC then seals and ships the packages. The NPC ships within 24 hours of packaging, using a shipping company that has a tracking system capable of locating the package and notifying the NPC of the delivery date and the signature of the person accepting delivery. Staff at the NPC enters the date shipped and the date received into the PCS.

3.2.2.2 Support LUCA Partners During Review Process [LUCA 7-2.2]

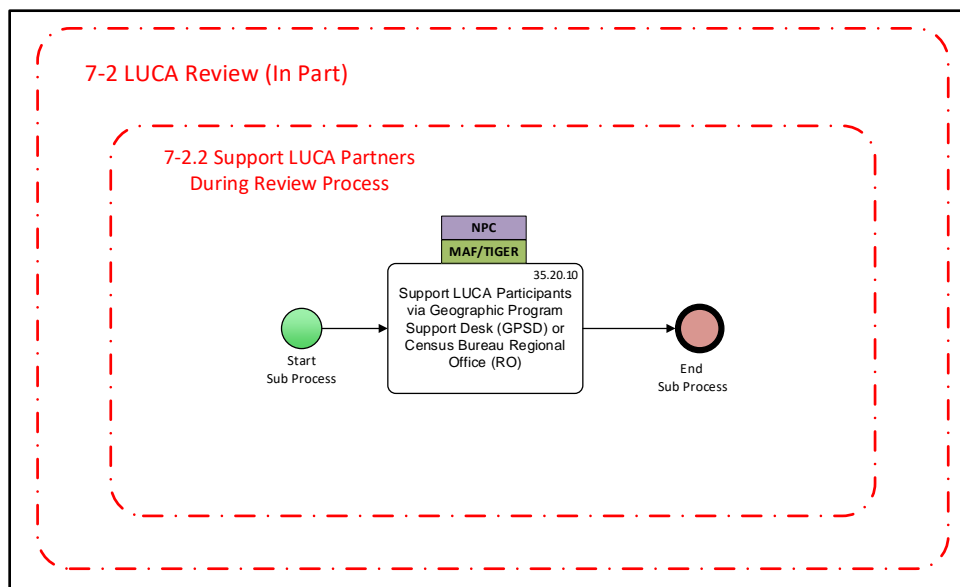


Figure 16: Support LUCA Partners During Review Process

Should participants reviewing the LUCA Operation review materials have additional questions, they can refer to the LUCA Operation User Guide included in the materials, view LUCA Operation training videos, access the LUCA Operation online FAQ, or personally contact the Geographic Programs Support Desk at NPC.

Geographic Programs Support Desk (GPSD)

The GPSD is responsible for answering questions from participants regarding their LUCA Operation materials. The Census Bureau staff provides training and documentation for the GPSD staff. The GPSD maintains a call log identifying who took the call; the date and time of the call; the entity ID, regional office, entity name, entity state; first and last name and phone number of the participant making the call; a description of the problem; whether the problem is closed, and if closed, the date closed, and if not closed, the status of the problem.

The LUCA support desk is comprised of three tiers:

- Tier 1 is located at the NPC and is staffed by the NPC clerks. The tier 1 support desk is primarily responsible for handling questions from smaller governments and nontechnical

questions, such as supplying lost passwords, updating contact information, or other calls following scripts.

- Tier 2 is also located at the NPC and is staffed by the cartographic technicians. The tier 2 support desk is responsible for trouble-shooting technical questions about GUPS.
- Tier 3 comprises the RO geographers and Census Bureau staff. When the tier 1 and tier 2 NPC support staff cannot answer a participant's inquiry, they will transfer the participant to staff at the RO. Tier 3 staff is also responsible for responding to calls and emails and entering information from the larger governments, such as states, larger cities, and from tribal governments and Puerto Rico.

3.2.3 LUCA Returns and Validation [LUCA 7-3]

Once the LUCA operation participants review and update the Census Bureau address lists and maps, they will return them to the NPC. The NPC staff will then prepare each submission for validation and processing.

Figure 17 shows the BPM for the LUCA Returns and Validation [LUCA 7-3] activity (area within the gray rounded rectangle) and its constituent activities within the overall context of the LUCA operation.

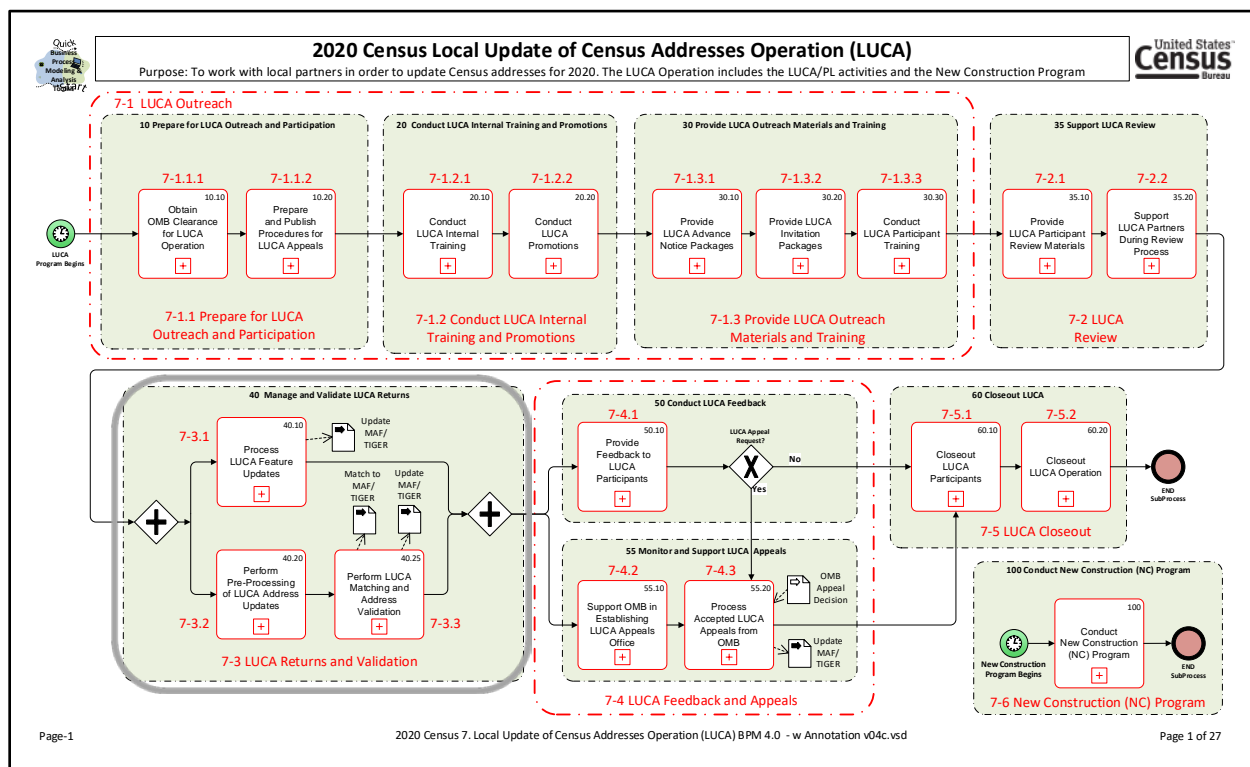


Figure 17: LUCA Returns and Validation [LUCA 7-3] Activities

The LUCA Returns and Validation operational activity is subdivided into the following activity areas.

- LUCA Returns and Validation [LUCA 7-3].
 - Process LUCA Feature Updates [LUCA 7-3.1].
 - Perform Preprocessing of LUCA Address Updates [LUCA 7-3.2].
 - Perform LUCA Matching and Address Validation [LUCA 7-3.3].

The NPC staff receives LUCA operation participant submissions and reviews each submission for completeness. Once NPC has accepted a LUCA operation submission as complete, they will update the PCS and post the address file for HQ processing and will perform feature updates.

During address matching, some LUCA operation addresses are validated. Those 2020 Census LUCA addresses that are not validated during address matching will be validated in the Address

Canvassing operation. After all LUCA operation addresses have been validated, HQ staff updates the MAF/TIGER system.

A detailed view of the activities that make up the LUCA Returns and Validation operational activity is given in Figure 18, Figure 19, and Figure 20 below.

Subsequent sections describe the LUCA Returns and Validation operational subactivities in detail.

3.2.3.1 Process LUCA Feature Updates [LUCA 7-3.1]

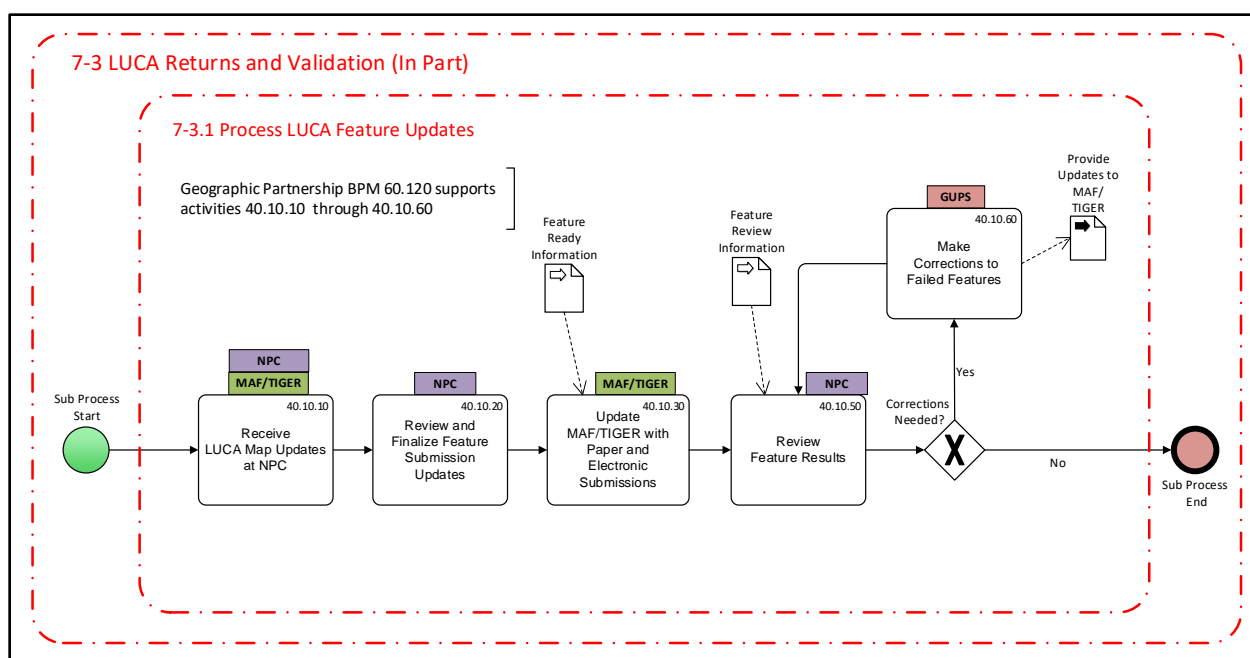


Figure 18: Process LUCA Feature Updates

Paper Maps

When NPC receives paper map submissions from LUCA operation participants, NPC staff updates the PCS. Next, NPC staff examines all map sheets to determine if the participant followed the procedures outlined in the Local Update of Census Addresses (LUCA) operation User Guide. The NPC reviewer checks whether the participant added any new road features or structure coordinates (map spots), contacts the participant for clarification of any ambiguous, illegible, or unclear annotations on the map, and updates the PCS. If the reviewer has no questions, they digitize any new or updated road features into the Geographic Aquis-based Topological Referencing and Encoding System within the MAF/TIGER system. Any new map spots are used to verify the location of the addresses on the LUCA address list.

Digital Shapefiles

The NPC may receive digital shapefile submissions on a CD/DVD or by the internet through the SWIM system. When NPC receives digital shapefile submissions from LUCA operation participants, NPC staff updates the PCS. Next, the NPC staff checks the participant CD/DVD submissions for viruses. If a virus is found, they destroy the infected file and contact the LUCA liaison to ask for a new submission. If no virus is found, the NPC reviewer creates a digital folder in the appropriate directory, names the folder with the entity code, and copies all of the files into the folder. The reviewer then scrubs the files using processing scripts.

Once the reviewer prepares the shapefiles, they verify the number of linear feature changes, which determines whether the linear feature changes will be made directly in the MAF/TIGER System (<25) or if they need to be inserted through the automated process of Conflation (25+). In addition, feature attribute changes are processed through the Feature Framework Update System.

3.2.3.2 Perform Preprocessing of LUCA Address Updates [LUCA 7-3.2]

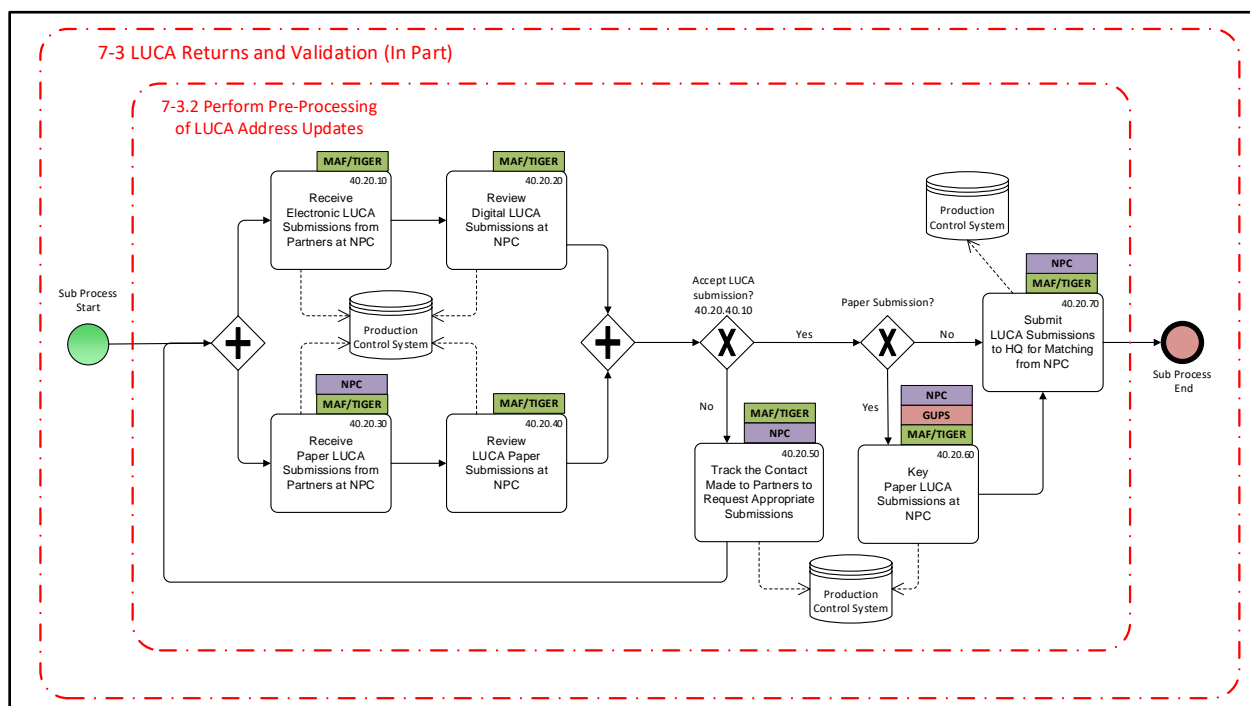


Figure 19: Perform Preprocessing of LUCA Address Updates

Paper Address Lists

Only GUs with fewer than 6,000 housing units (HUs) are eligible to receive a paper address list. Participants who choose to receive paper address lists also receive five copies of a blank Address List Add Page to record new addresses, as well as an Address Count List by block for reference.

Upon receipt of a paper LUCA address submission, NPC staff performs check-in by entering data in the PCS to note what has been received. Then NPC processes the paper submission by examining all paper Address List materials (Address List and Address List Add Pages) to ensure that the participant followed the review/update procedures outlined in the LUCA operation User Guide – Paper Format. The reviewer will pull out pages that do not contain annotations and ensure that all paper lists are legible. The NPC staff will contact the participant for clarification of any ambiguous, illegible, invalid, or unclear notations. If the participant added addresses, the reviewer ensures that each address contains state, county, census tract, census block number, house number, apartment/unit number (if applicable), Group Quarters name (if applicable), and street name. Once processing is complete, the submission moves to verification to have another clerk at NPC perform all of the same checks.

Once NPC staff deems a paper LUCA address submission complete, the keying staff at NPC uses the GUPS to open an unedited digital address list and key in any address updates. After keying address updates in the GUPS, a separate review staff at NPC conducts a Quality Control to make sure that the address list is a valid LUCA submission and checks for data validity. Then NPC submits the GUPS output to HQ for matching, and all new addresses needing further research after the address matching process are sent to the In-Office Address Canvassing team for validation and subsequent processing.

Finally, if a submission is late (beyond 7 days past the 120-day submission deadline), the submission goes into a holding bin until all on-time submissions have been worked.

Digital Address Lists

The NPC may receive digital address list submissions on a CD/DVD or by the internet through the SWIM system. When NPC receives digital address list submissions from LUCA participants, they execute a script to create a digital folder in the appropriate directory, name the folder with the entity code, and copy all of the files into the folder. Then, NPC staff performs check-in and updates the LUCA PCS with relevant data about what was received.

3.2.3.3 Perform LUCA Matching and Address Validation [LUCA 7-3.3]

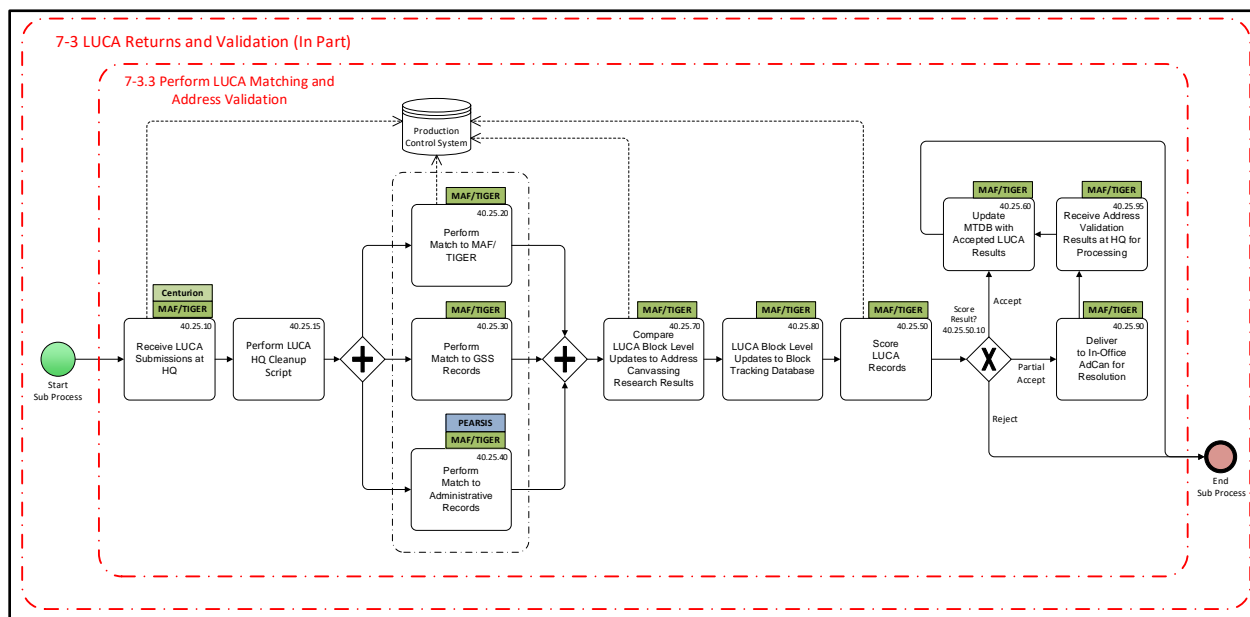


Figure 20: Perform LUCA Matching and Address Validation

After check-in, the file goes through digital processing. During processing, the submission is reviewed, and in some cases edited. In some cases, NPC may find significant errors in a LUCA submission. When this occurs, NPC uses the PCS to create a referral for staff in the Regional Offices/Regional Census Centers (ROs/RCCs) to follow up with partners and correct their submission. Once a submission has been processed, it moves to another staff for verification, checking again for the completeness of a file, and data in the PCS. Then, NPC staff delivers the submission to HQ for a final preprocessing cleanup script and address matching. The LUCA submissions are stored in a single file directory, which will be accessible to NPC, RO, and GEO HQ staff. Note that submissions sent to matching contain only complete, valid addresses as defined in the LUCA respondent guides.

Finally, if a submission is late (beyond 7 days past the 120-day submission deadline), the submission goes into a digital holding directory until all on-time submissions have been worked.

Each submission is loaded into the LUCA Master Table, and then matched to existing data from the MAF/TIGER system, GSS records, and administrative records. Address matching may indicate whether the LUCA submissions contain addresses that the Census Bureau already has, reveal potential new addresses that we should add to our records, or indicate address records that need to be deleted or changed to a nonresidential address status.

During LUCA address matching, any LUCA submission address records that match to existing residential address records in the MAF/TIGER system will be included in the 2020 Census enumeration universe. Similarly, any LUCA submission address records that match to existing nonresidential address records in the MAF/TIGER system will be excluded from the 2020 Census enumeration universe.

Address records from the LUCA submissions that do not match with existing MAF/TIGER system address records are considered and marked as potential “new addresses” and are sent to the Address Canvassing operation for validation. Additionally, other addresses that would be sent to the Address Canvassing operation for validation include LUCA addresses that match to existing MAF/TIGER system address records in different geographic areas. These address records will go to the Address Canvassing operation to validate the address geocode. Before sending LUCA address records to the Address Canvassing operation, a review of block-level data from other geographic operations is included.

The LUCA submission address records are validated either by matching to existing MAF/TIGER System address records, or by the Address Canvassing operation.

Once address validation is complete for all LUCA address records, all LUCA address records will be updated in the MAF/TIGER System based on the results of LUCA matching and/or the Address Canvassing operation, as appropriate.

3.2.4 LUCA Feedback and Appeals [LUCA 7-4]

The Census Bureau provides LUCA feedback materials to participating GUs on a flow basis in the summer of 2019. Participants receive their feedback materials in the same media format that they requested for the initial LUCA review materials.

Figure 21 shows the BPM for the LUCA Feedback and Appeals [LUCA 7-4] activity (area within the gray rounded rectangle) and its constituent activities within the overall context of the LUCA operation.

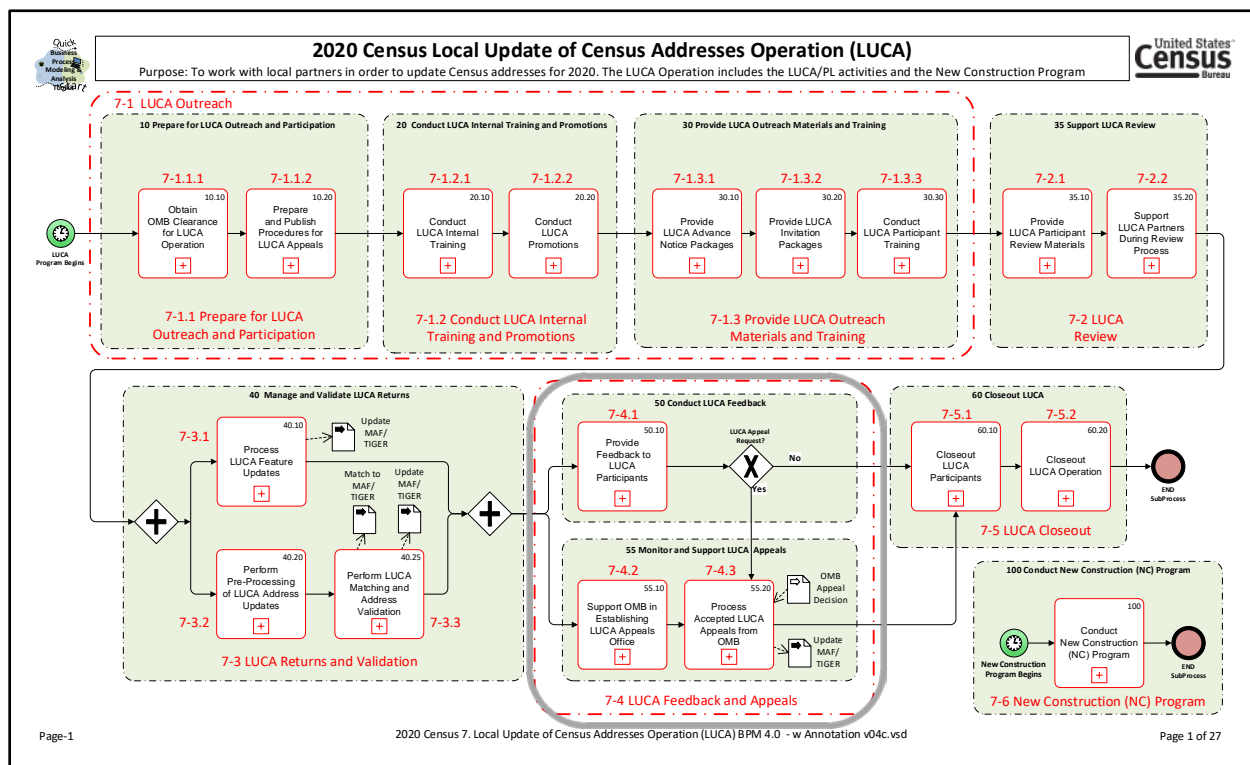


Figure 21: LUCA Feedback and Appeals [LUCA 7-4] Activities

The LUCA Feedback and Appeals operational activity is subdivided into the following activity areas.

- LUCA Feedback and Appeals [LUCA 7-4].
 - Provide Feedback to LUCA Participants [LUCA 7-4.1].
 - Support OMB in Establishing LUCA Appeals Office [LUCA 7-4.2].
 - Process Accepted LUCA Appeals from OMB [LUCA 7-4.3].

In order to support feedback from LUCA Participants, Census Bureau staff supports OMB to establish the LUCA Appeals Office. The LUCA Appeals Office is operational no later than August 2019.

In August of 2019, the Census Bureau provides feedback to LUCA participants. Once LUCA participants receive their feedback materials, they have 45 calendar days to file an appeal with the LUCA Appeals Office. Upon receipt of a LUCA appeal, the LUCA Appeals Office will use the supporting documentation sent by the participant to decide whether to accept or reject an appeal. When OMB has made a determination on a LUCA appeal, they will notify the participant

of their determination. The LUCA Appeals Office delivers accepted LUCA appeals to the Census Bureau, which then processes the appealed addresses.

A detailed view of the activities that make up the LUCA Feedback and Appeals operational activity is given in Figure 22, Figure 23, and Figure 24 below.

Subsequent sections describe the LUCA Feedback and Appeals operational subactivities in detail.

3.2.4.1 Provide Feedback to LUCA Participants [LUCA 7-4.1]

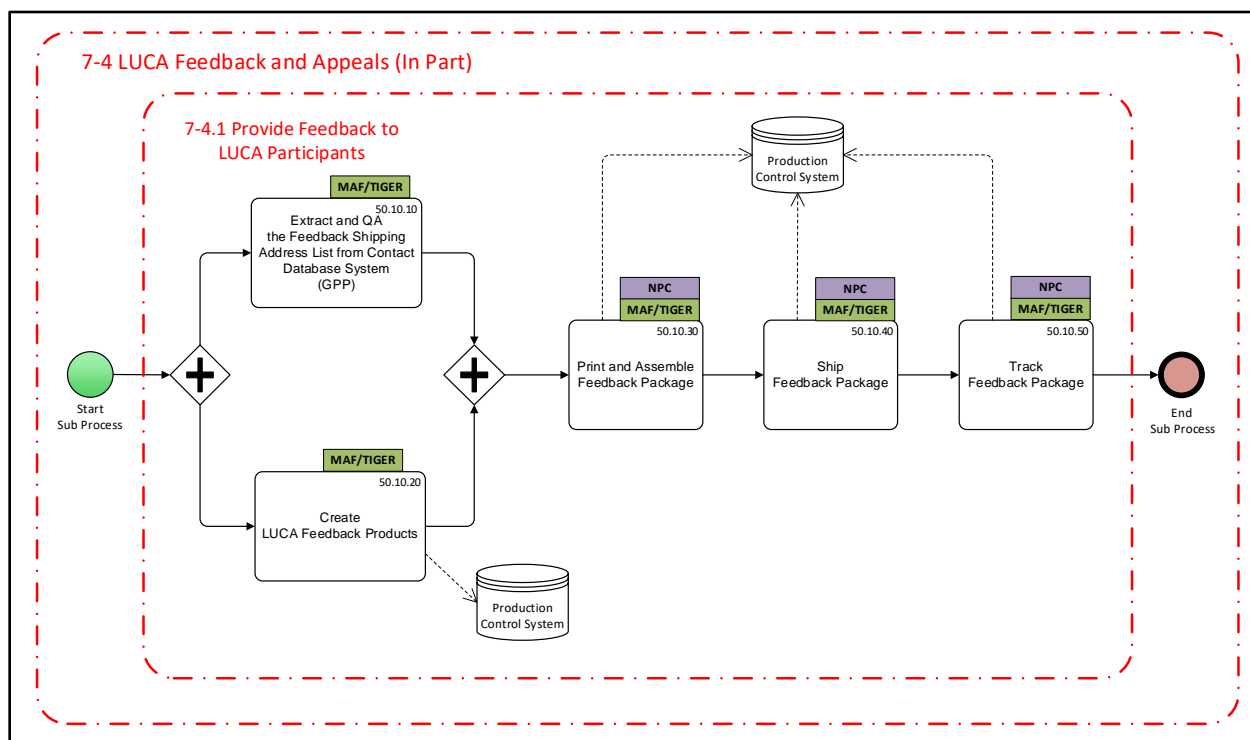


Figure 22: Provide Feedback to LUCA Participants

The Census Bureau provides the LUCA Feedback materials after completing the following steps:

1. For GUs that submitted address updates, the Census Bureau reviews and applies each correctly submitted participant address update to its address list, adding any new addresses not already on its list.
2. The Census Bureau conducts the Address Canvassing operation and in the course of doing so verifies the participant-suggested address updates (additions, corrections, deletions, etc.). The Address Canvassing operation ensures that all address updates and additions exist and that they are in the correct census block.

Participants receive a Detailed Feedback Address List that shows each address record processed by the Census Bureau and an action code that identifies a specific action taken by the Census Bureau on that address record. The Detailed Feedback Address List also identifies addresses deleted in other census operations.

3.2.4.2 Support OMB in Establishing LUCA Appeals Office [LUCA 7-4.2]

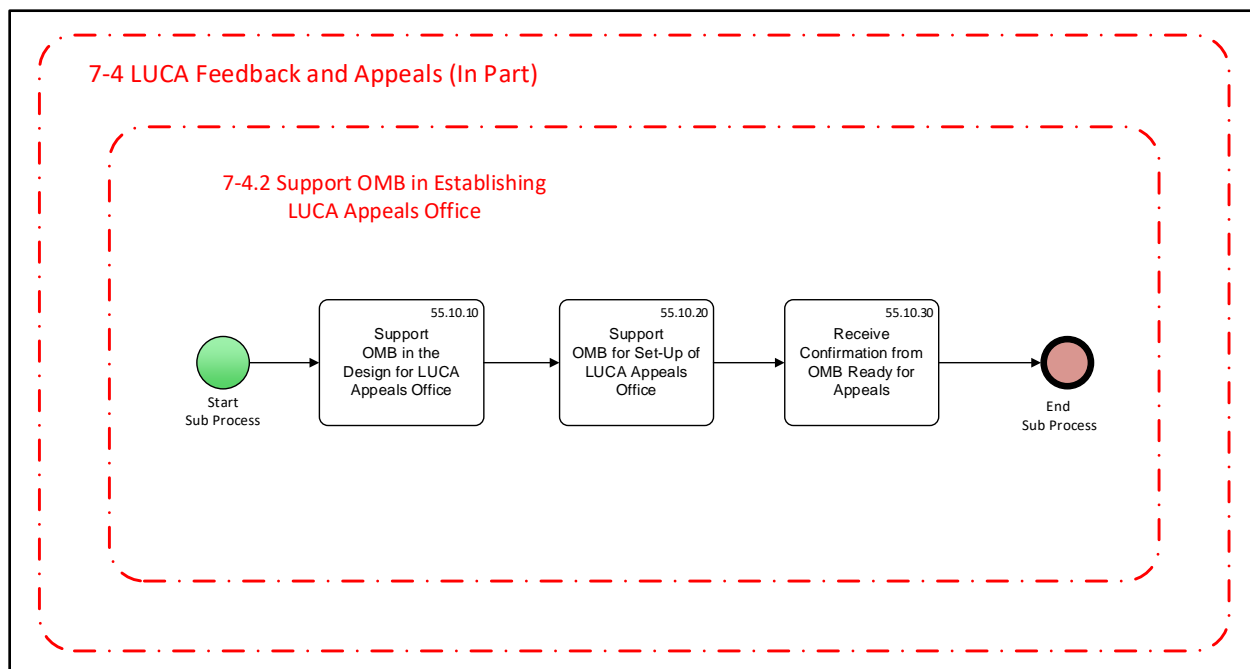


Figure 23: Support OMB in Establishing LUCA Appeals Office

To ensure that tribal, state, and local governments participating in the LUCA operation have a means to appeal the Census Bureau’s determinations, the Census Address List Improvement Act of 1994 requires that the Administrator of OMB’s Office of Information and Regulatory Affairs, acting through the Chief Statistician and in consultation with the Census Bureau, develop an Appeals Process to resolve any disagreements that may remain after participating governments receive the Census Bureau’s LUCA Feedback.

The Census Bureau works closely with OMB and provides to OMB the LUCA Feedback materials, so they can see the final LUCA and Address Canvassing operation determinations for each address and which they can use as a point of comparison for appealed addresses. GUs that participated in the LUCA operation, completed a review of LUCA operation materials, and opted to receive LUCA Feedback materials may file an appeal. Participants may file an appeal with the LUCA Appeals Staff, a temporary federal entity set up to administer the Appeals Process. LUCA

operation participants will have 45 days from receipt of feedback materials to file an appeal with the Appeals Office.

3.2.4.3 Process Accepted LUCA Appeals from OMB [LUCA 7-4.3]

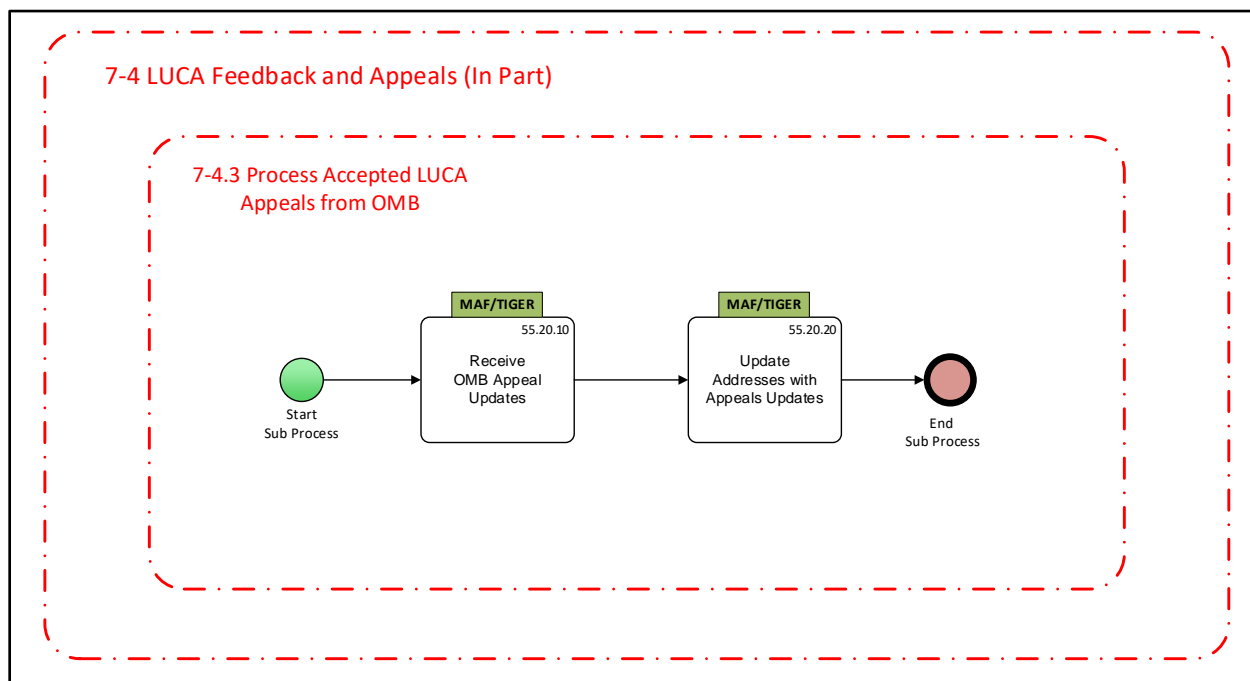


Figure 24: Process Accepted LUCA Appeals from OMB

For each appeal, an Appeals Officer will review the Census Bureau’s feedback materials, the written documentation, and supporting evidence submitted by the eligible GU, and will consider the quality of the address reference source as the basis for determining the validity of an address (or group of addresses) and (their) location(s). At the conclusion of the review of an appealed address (or group of addresses), the Appeals Officer will prepare a draft written determination. A higher-level official on the Appeals Staff will review the draft written determination. The Director of the Appeals Staff (or his or her designee) will then issue a final written determination to both the eligible government and the Census Bureau.

The final written determination will include a brief explanation of the Appeals Staff’s decision and will specify how the appealed address(es) or its/their location(s) should appear on the 2020 Census Address List. Each final written determination shall become part of the administrative record of the Appeals Process.

The Appeals Staff’s decision is final. The Census Bureau includes all addresses added or corrected as a result of the Appeals Process on the 2020 Census Address List and attempts to

enumerate at them. Inclusion of an address on the list does not mean that a living quarter with that address exists or that the address will be included in the final 2020 Census enumeration universe.

3.2.5 LUCA Closeout [LUCA 7-5]

After participating in the LUCA operation, the Census Bureau will close each GU out of the operation by collecting their signed “Destruction or Return of Title 13 Materials” form. Once all participants are closed out of the LUCA Operation, the Census Bureau will close out the LUCA operation as a whole.

Figure 25 shows the BPM for the LUCA Closeout [LUCA 7-5] activity (area within the gray rounded rectangle) and its constituent activities within the overall context of the LUCA operation.

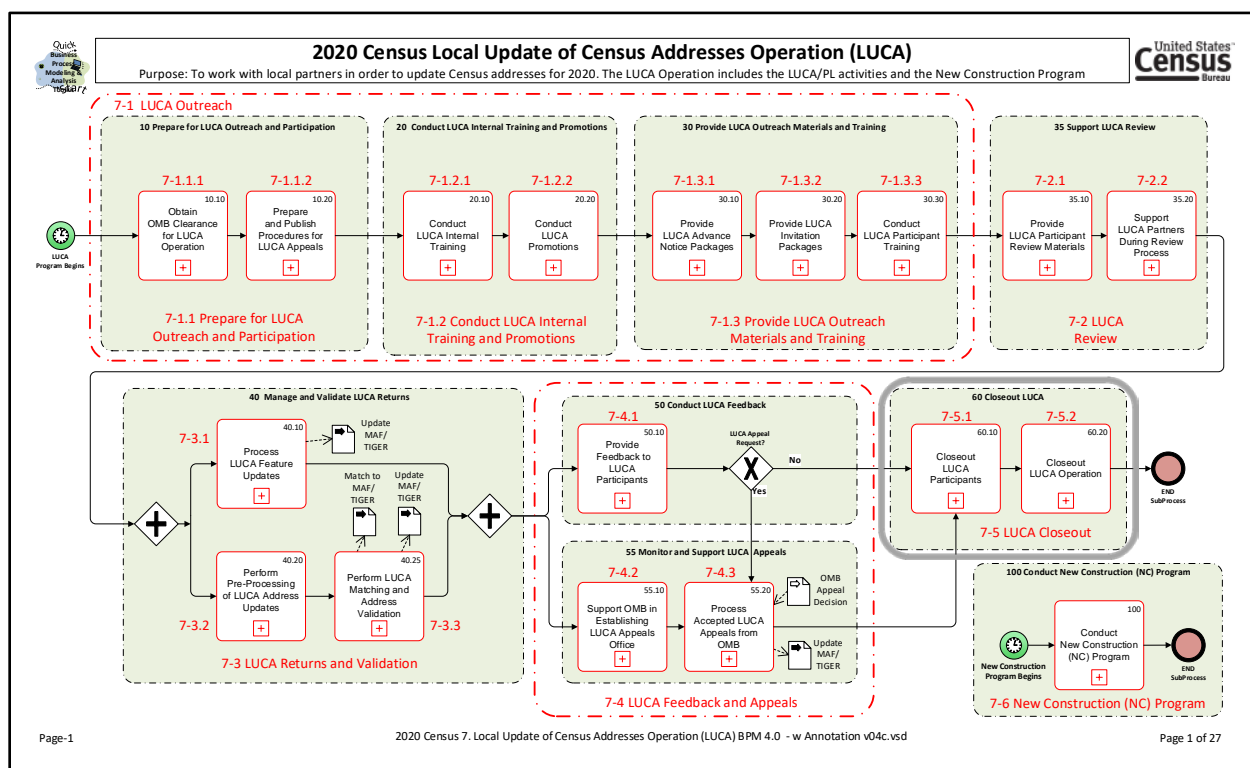


Figure 25: LUCA Closeout [LUCA 7-5] Activities

The LUCA Closeout operational activity is subdivided into the following activity areas:

- LUCA Closeout [LUCA 7-5].
 - Closeout LUCA Participants [LUCA 7-5.1].

- Closeout LUCA Operation [LUCA 7-5.2].

In order to close out the LUCA operation, the LUCA Team needs to complete two activities. All LUCA participants who received materials are closed out of the operation. The final activity involves completing the LUCA Assessment and closing the LUCA operation.

A detailed view of the activities that make up the LUCA Closeout operational activity is given in Figure 26 and Figure 27 below.

Subsequent sections describe the LUCA Closeout operational subactivities in detail.

3.2.5.1 Closeout LUCA Participants [LUCA 7-5.1]

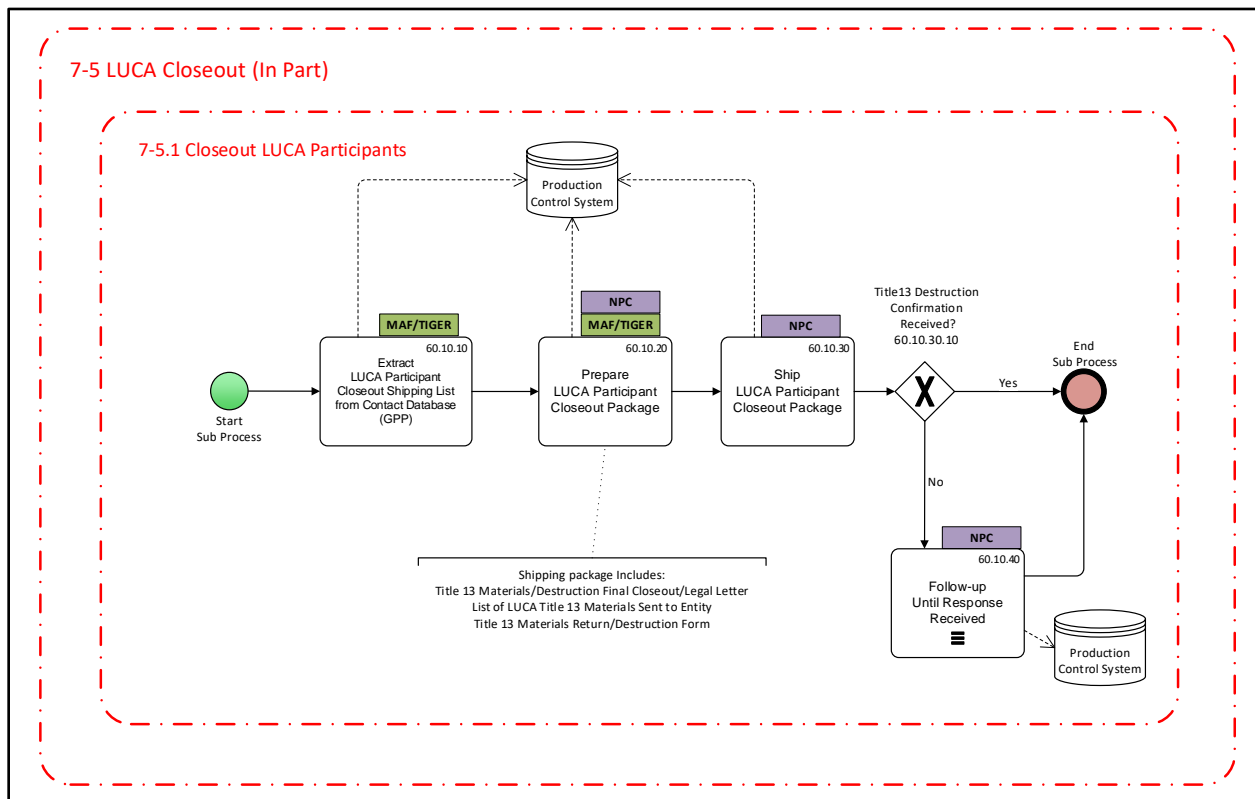


Figure 26: Closeout LUCA Participants

Upon closeout of the LUCA operation, LUCA liaisons and the HEO receive a closeout package from the NPC. The closeout package includes a closeout letter to the LUCA operation liaisons and a “Destruction/Return of Title 13 Materials” form. The NPC sends the closeout packages by trackable postal carrier and updates the PCS with relevant shipping information.

The closeout letter informs the liaison that they are entitled to receive LUCA feedback materials, provided they check the box on this letter and return the letter to the NPC. If the liaison does not

want to receive the LUCA Feedback materials, they must sign and return the “Destruction/Return of Title 13 Materials” form to the NPC. Upon receipt of either the “Destruction/Return of Title 13 Materials” form or the completed closeout letter, NPC staff updates the PCS. Census Bureau staff follow up with the participant until the NPC has received either a response about feedback materials or a signed “Destruction/Return of Title 13 Materials” form from them. Once the NPC receives the signed “Destruction/Return of Title 13 Materials” form, the Census Bureau considers the participant closed out of the LUCA operation.

If any signatures are missing from the “Destruction/Return of Title 13 Materials” form, Census Bureau staff must contact the liaison to either obtain the missing signature or, if the person is not available, the liaison must sign out next to that individual’s name attesting that the individual does not have Title 13 LUCA operation materials.

If the liaison cannot be found or no longer works for the GU, the HEO must appoint another liaison by completing the registration form naming the liaison, the LUCA Title 13 Confidentiality Agreement, and the LUCA Self-Assessment Checklist. The GU cannot continue in the operation or legally sign out of the operation without a liaison to attest to the security or destruction of the Title 13 materials.

If the liaison reports that they have lost their LUCA materials and, consequently, cannot complete the “Destruction /Return of Title 13 Materials” form, Census Bureau staff must report this security breach to the BOC Computer Incident Response Team, and then close the GU out of the LUCA operation.

3.2.5.2 Closeout LUCA Operation [LUCA 7-5.2]

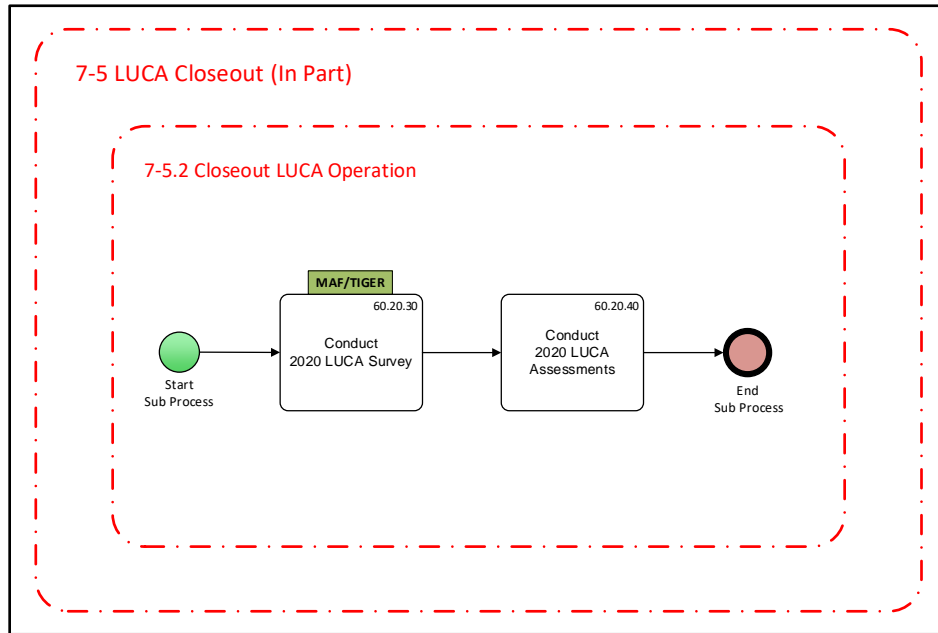


Figure 27: Closeout LUCA Operation

As shown in the BPM, there are two activities involved in the Closeout LUCA Operation:

- The Conduct 2020 LUCA Survey activity provides data from participants for the 2020 LUCA Final Assessment.
- The Conduct 2020 LUCA Assessments activity uses data from the extracts for LUCA reports, final shipping/enumeration outcomes, and from the 2020 LUCA Survey. The Final LUCA Assessment includes the final operational information, cost data, data analysis, and lessons learned for a source of knowledge for future LUCA operations and includes input from Decennial Census Management Division (DCMD), GEO, NPC, and Field Division (FLD) staff who worked on the LUCA operation.

4. New Construction Design Overview and Process Description

4.1 New Construction Design Overview

The sections below present the high-level design for the New Construction program.

4.1.1 High-Level Operational Design

The design of the New Construction program for the 2020 Census includes five major operational activity areas:

- **New Construction Planning**
- **New Construction Promotions and Training**
- **New Construction Mailing and Review Support**
- **New Construction Returns and Validation**
- **New Construction Closeout**

Together, these activity areas represent the complete set of work that needs to be performed to conduct this program.

The full hierarchy of activities for the New Construction program is provided in Appendix C in the form of an Activity Tree. In the Activity Tree, this major operational activity area listed above is numbered and then decomposed into a numbered set of subactivities, some of which are further decomposed into more detailed numbered subactivities or steps.

For a full description of the operational subactivities that comprise the New Construction program, see the Detailed Process Description as outlined in Section 4.2 below.

4.1.2 Operational Context for the New Construction Program Activities

The New Construction program operational activity described above is conducted within the context of other 2020 Census operations and other programs or data sources that are external to the 2020 Census Program. One way to depict an operational context is by using a “Context Diagram,” which shows the boundary of the operational process, the operational activities it contains, and the information exchanged with its neighbor operations (or other entities) as well as the resources (mechanisms) needed to conduct the operational work.

Figure 28 is a top-level context diagram for the New Construction program represented as an Integrated Definition, Level 0 (IDEF0) Model. An IDEF0 Model of a process (or operation)

shows the Inputs, Controls, Outputs and Mechanisms of the process. These IDEF0 model elements are summarized below and described further in the sections that follow.

The yellow box in the center of the IDEF0 model lists the major operational activity areas for the operation, numbered as given in the LUCA Operation (incl. New Construction) Activity Tree in Appendix C. Specific Information Exchanges (IE) are shown in different colored boxes to represent the Inputs (green boxes on left side), Outputs (orange boxes on right side), Controls (purple boxes on top) and Mechanisms (blue boxes on the bottom). Boxes to the left of the Inputs indicate the Provider of the Inputs to the operation (typically another 2020 Census operation or an external source). The Provider of the Controls is noted in the box itself. Boxes to the right of the Outputs indicate the Receiver of the Outputs (typically another 2020 Census operation or external entity). Each Information Exchange has a name and a unique number for identification purposes.

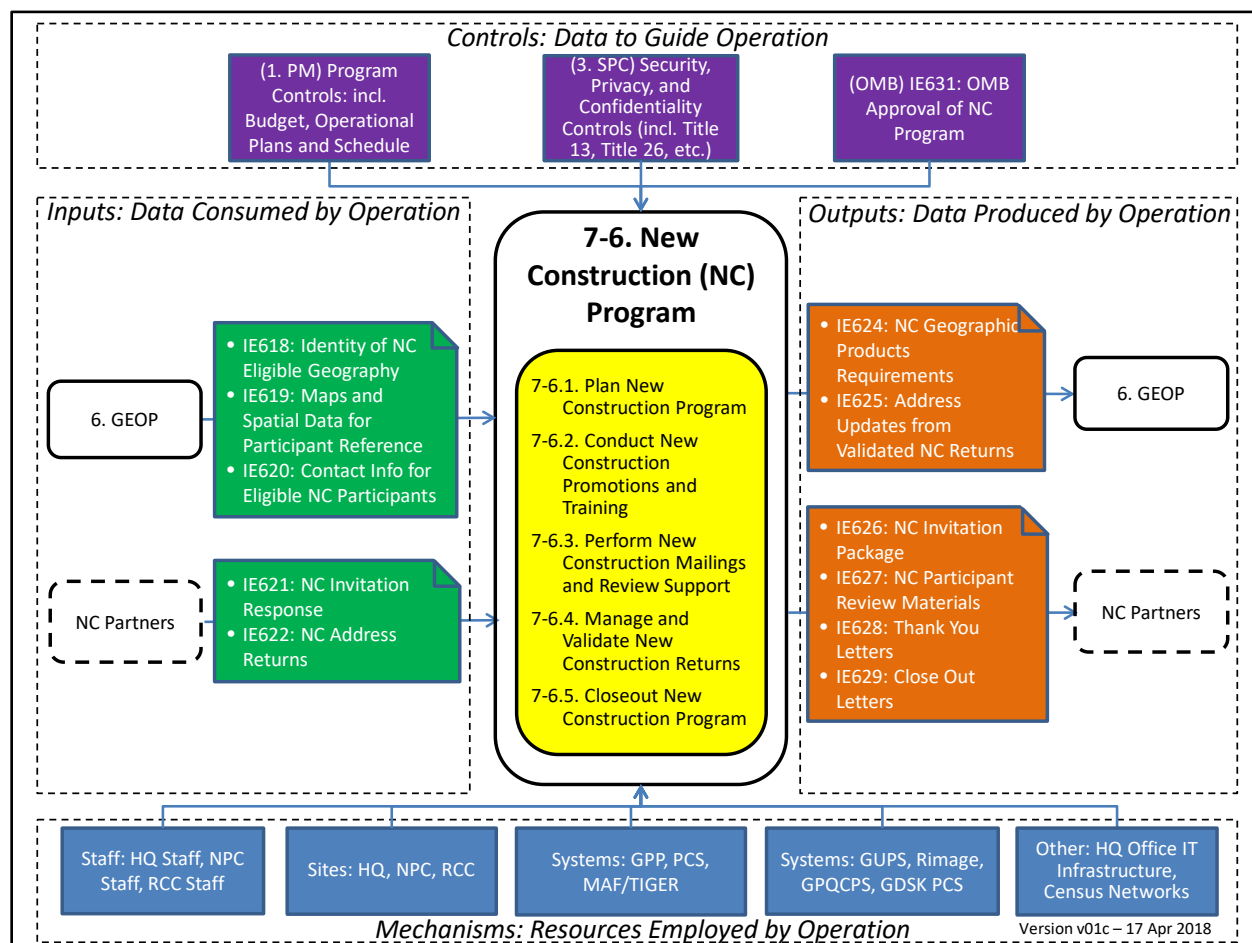


Figure 28: Context Diagram for New Construction Program Activities

For the New Construction program activities, Inputs include contact information from eligible entities and address and spatial data for review.

New Construction program Controls include basic program controls such as budget and schedule.

Outputs for the New Construction program activities include two separate mailings to participants: the invitation mailing in Spring 2019 and the review materials mailing in late Summer 2019. Additionally, five separate email mailings to participants: invitation to register online, registration reminder email sent shortly after the invitation mailing, webinar email sent about a month before materials are distributed, material review reminder email sent 20 days into the 45-day review period, and a closeout email in the Fall 2019.

Finally, New Construction program Mechanisms include the staff from various Census Bureau worksites such as Headquarters (HQ), regional offices (ROs), regional census centers (RCCs), and the National Processing Center (NPC), as well as various systems and databases, such as the GPP, GUPS, Production Control System (PCS), and the MAF/TIGER system.

For detailed descriptions of the Inputs, Controls, Outputs and Mechanisms used by the New Construction program, see the sections that follow.

4.1.2.1 New Construction Program Operational Inputs

Inputs are the data that are consumed by the operation. The inputs define the amount of operational work that needs to be performed.

Table 7 lists the inputs to the New Construction program.

Table 7: New Construction Program Operational Inputs

Provider	Information Exchange	Description
6. Geographic Programs operation (GEOP)	IE618: Universe of NC Eligible Geography	Eligible entities derived from TEA 1 (Self-Response Areas) and BCU Tables.
	IE619: Maps and Spatial Data for Participant Reference	Shapefiles and PDF maps detailing current and eligible blocks.

Provider	Information Exchange	Description
	IE620: Contact Info for Eligible NC Participants	Contact Information for NC eligible participants.
NC Partners	<ul style="list-style-type: none"> IE621: NC Invitation Response IE622: NC Address Returns 	<p>Correspondence and data from NC partners including:</p> <ul style="list-style-type: none"> Responses to NC Operational Notices. Returns for proposed updates to Addresses.

4.1.2.2 New Construction Program Operational Controls

Controls are the data that guide the behavior of the operation. They are not consumed by the operation, but rather they provide guidance, models, limits, criteria, cutoff dates, or other information that controls the way in which the operational work is performed.

Table 8 lists the controls for the New Construction program.

Table 8: New Construction Program Operational Controls

Provider	Information Exchange	Description
1. Program Management operation (PM)	Program Controls	<p>Program Control information including:</p> <ul style="list-style-type: none"> Budget. Operational Plans and Schedule.
3. Security, Privacy, and Confidentiality operation (SPC)	Security, Privacy, and Confidentiality Controls	<p>Laws, policies, regulations, and guidelines related to physical security, IT security, data security and privacy and confidentiality impacts, analyses, and processes. These include but are not limited to Title 13, Title 26, and other laws and policies related to protection of personally identifiable information.</p>

Provider	Information Exchange	Description
OMB	IE631: OMB Approval of NC Program	Approval of NC Program as provided by OMB.

4.1.2.3 New Construction Program Operational Outputs

Outputs are the data produced by the operation. The outputs constitute the results of operational work that has been performed. Outputs produced may be used as inputs or controls to other operations.

Table 9 lists the outputs from the New Construction program.

Table 9: New Construction Program Operational Outputs

Consumer	Information Exchange	Description
6. Geographic Programs operation (GEOP)	<ul style="list-style-type: none"> IE624: NC Geographic Products Requirements. IE625: Address Updates from Validated NC Returns. 	Geographic Data outputs including: <ul style="list-style-type: none"> Requirements for the Geographic Products created for use during NC. Address updates resulting from validated NC returns.
New Construction (NC) Partners	<ul style="list-style-type: none"> IE626: NC Invitation Package. IE627: NC Participant Review Materials. IE628: Thank You Letters. IE629: Close Out Letters. 	Correspondence and Data sent to NC Partners either through mail or email including: <ul style="list-style-type: none"> NC Invitation Packages. Registration reminder email. Webinar invite. NC Participation Materials (Maps and Address Template). Material review reminder email. Thank You Letters. Close Out Letters.

4.1.2.4 New Construction Program Operational Mechanisms

Mechanisms are the resources (people, places, and things) that are used to perform the operational processes. They include Staff Resources, Infrastructure Sites, and Systems and other Technology Infrastructure.

Staff Resources

Table 10 identifies the Staff Resources employed for the New Construction program.

Table 10: Staff Resources Used Within New Construction Program Operational Activities

Staff Resources	Description/Role
HQ Staff	HQ Staff to manage NC Program and coordinate activities with NPC and NC Partners. Includes participation by Geography Division (GEO) staff, Field Division (FLD), and DCMD staff.
NPC Staff	NPC Staff to print, assemble, and ship materials. NPC Staff to conduct and manage the managing of NC returns.
RO/RCC Staff	RO/RCC Staff to support interaction with NC Partners.

Infrastructure Sites

Table 11 identifies the Infrastructure Sites employed for the New Construction program.

Table 11: Infrastructure Sites for New Construction Program Operational Activities

Infrastructure Site	Description/Role
HQ	HQ Site for Office Work.
NPC	NPC Site for: <ul style="list-style-type: none"> • Printing, assembling, and shipping NC materials. • Receiving NC returns. • Preprocessing NC address updates. • Keying/Uploading digital address lists to GUPS. • Answering calls through the Geographic Programs Support Desk.
RO/RCC	RO/RCC staff supporting NC Partner interaction. Staff will answer calls and follow-up with NC Partners.

Systems and other Technology Infrastructure

Table 12 identifies the Systems employed for the New Construction program.

Table 12: Systems Used Within New Construction Program Operational Activities

System	Description
Geographic Program Participant (GPP) Database	A Census Bureau database that records contact information for governmental units.
Production Control System (PCS)	A Census Bureau system to control and monitor the workflow and progress of materials for program participants. The system will have the same look and feel for all Geographic Partnership Programs.
MAF/TIGER System	A Census Bureau system that provides address and spatial data products for participants and a mechanism for applying updates made by participants.
Geographic Update Participant System (GUPS)	A Census Bureau software tool that enables the collection of geographic updates from participants.
Rimage Disk Publishing	Produces CD/DVD disks.
Secure Web Incoming Module (SWIM)	A Census Bureau web-based application used by participants to ensure the secure transfer of all submissions to the Census Bureau.
Geographic Programs Quality Control and Plotting System (GPQCPS)	System used for paper map production and quality control.
Geographic Disk Production Control System (GDSK PCS)	CD creation control system.

Other Technology Infrastructure employed for the New Construction program includes:

- HQ Office IT Infrastructure for conducting New Construction operational work.

- Census Bureau Network connectivity for data transmission between operational systems and operational sites.

4.2 New Construction Program Process Description

Figure 29 is a top-level Business Process Model (BPM) showing the activity areas within the New Construction program. BPMs for the 2020 Census follow industry-standard Business Process Model and Notation (BPMN). An explanation of how to read the BPMN notations and a full sized copy of all of the BPMN diagrams for this program are provided under separate cover.

This top-level BPM serves as the Context Model for the New Construction program. A BPMN Context Model displays the high-level activities within the operation and relationships between them, whereas the IDEF0 Context Diagram shown earlier depicts the boundaries of the operation or activity and the interfaces between the operation or activity and other operations and activities with which it is associated.

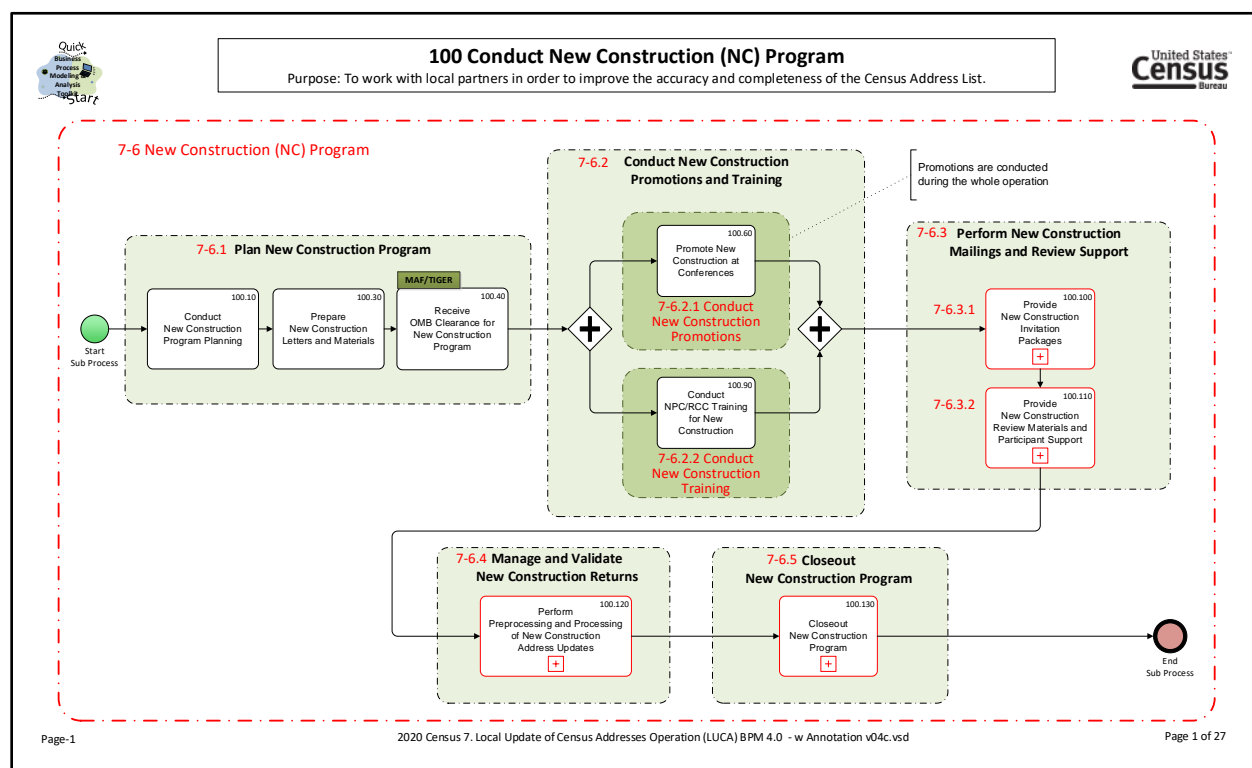


Figure 29: New Construction Program Context Model

The New Construction program is subdivided into the following activity areas.

- New Construction (NC) Program [LUCA 7-6].
 - Plan New Construction program [LUCA 7-6.1].
 - Conduct New Construction Promotions and Training [LUCA 7-6.2].
 - Perform New Construction Mailings and Review Support [LUCA 7-6.3].
 - Manage and Validate New Construction Returns [LUCA 7-6.4].
 - Closeout New Construction program [LUCA 7-6.5].

Subsequent sections describe the New Construction (NC) program operational subactivities in detail.

4.2.1 Plan New Construction Program [LUCA 7-6.1]

The first New Construction activity is “Plan New Construction program”. Planning includes having Census Bureau staff complete the OMB clearance process as well as create letters, promotional material, and procedural documents. Census Bureau staff will work to create the New Construction universe and determine eligible blocks for update.

A detailed view of the activities that make up the “Plan New Construction program” operational subactivity is given in Figure 30 below.

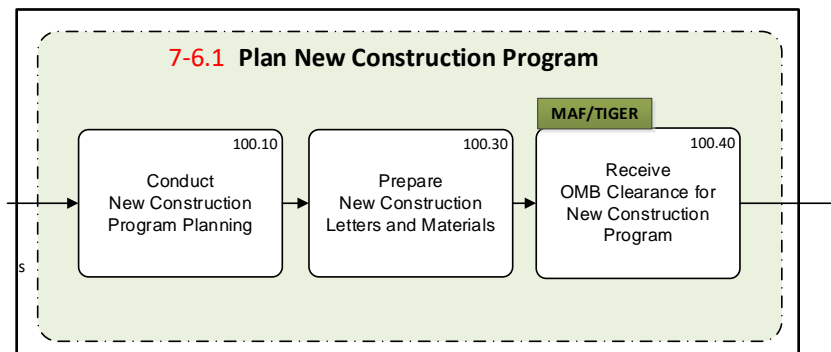


Figure 30: Plan New Construction Program

Conduct New Construction Program Planning includes determining the New Construction universe, creating the program schedule, determining the materials needed to conduct the program, and creating the materials, and procedural documents.

Prepare New Construction Letters and Materials includes internal creation, review, and finalization of materials. The Census Bureau finalizes the letters and materials that will be sent to the HEOs of eligible governments, formally inviting them to participate in the LUCA operation.

The eligible governments are instructed to return the registration materials, indicating whether they are participating in the New Construction program.

Once the invitation materials are approved, the Census Bureau staff contacts the ACS D for the formatting and printing of the materials. During this same period, the Census Bureau staff must work with the NPC to prepare documents for overprinting.

Receive OMB Clearance for New Construction program includes providing justification of the program with supplemental documents. The Census Bureau must provide an abstract of the New Construction program for publication in the Federal Register Notice. The Federal Register Notice provides an overview of the New Construction program and offers the public an opportunity to comment. The New Construction Federal Register Notice is posted for 60 days to solicit public comment. After the 60-day comment period has ended, the Census Bureau considers the public comments that have been submitted and makes any revisions the Census Bureau believes are necessary or desirable.

The Census Bureau staff prepare the OMB Clearance Package. The OMB Clearance Package includes the New Construction program forms and other required documents sent to OMB for approval.

When all final changes and corrections to the New Construction program OMB package are completed, the New Construction program OMB package is sent for final approval to OMB. Finally, the Census Bureau receives final OMB Clearance.

4.2.2 Conduct New Construction Promotions and Training [LUCA 7-6.2]

The “Conduct New Construction Promotions and Training” operational subactivity is subdivided into the following activity areas.

- Conduct New Construction Promotions and Training [LUCA 7-6.2].
 - Conduct New Construction Promotions [LUCA 7-6.2.1].
 - Conduct New Construction Training [LUCA 7-6.2.2].

A detailed view of the activities that make up the “Conduct New Construction Promotions and Training” operational subactivity is given in Figure 31 below.

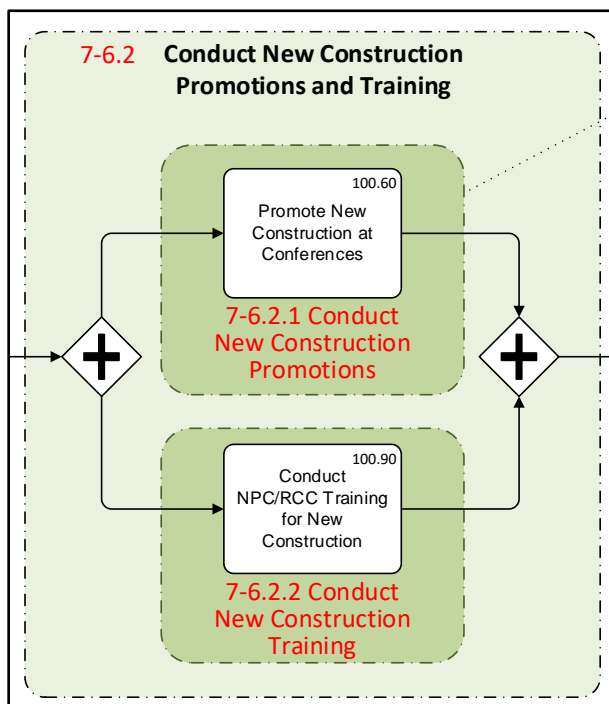


Figure 31: Conduct New Construction Promotions and Training

Conduct New Construction Promotions [LUCA 7-6.2.1]

New Construction Promotional Materials include the New Construction flyer, PowerPoint presentations, and updated information on the New Construction website. Staff create presentations and conduct internal training sessions for staff who will field questions from New Construction participants and who will help to process New Construction returns. In September 2019, the Census Bureau ships materials to and conducts webinar trainings for registered New Construction participants. The webinar is recorded and posted to the New Construction website for participant reference.

Conduct New Construction Training [LUCA 7-6.2.2]

NPC/RCC Training for New Construction is the Technical and Clerk staff training for processing New Construction returns. The Census Bureau staff may conduct the training sessions in person, by video conferencing, or through WebEx. The Census Bureau staff conducts the training a few days before the materials are mailed. NPC and RCC staffs review and discuss any questions they have concerning the materials and the New Construction program.

4.2.3 Perform New Construction Mailings and Review Support [LUCA 7-6.3]

The “Perform New Construction Mailings and Review Support” operational subactivity is subdivided into the following activity areas.

- Perform New Construction Mailings and Review Support [LUCA 7-6.3].
 - Provide New Construction Invitation Packages [LUCA 7-6.3.1].
 - Provide New Construction Review Materials and Participant Support [LUCA 7-6.3.2].

A detailed view of the activities that make up the “Perform New Construction Mailings and Review Support” operational subactivity is given in Figure 32 and Figure 33 below.

Provide New Construction Invitation Packages [LUCA 7-6.3.1]

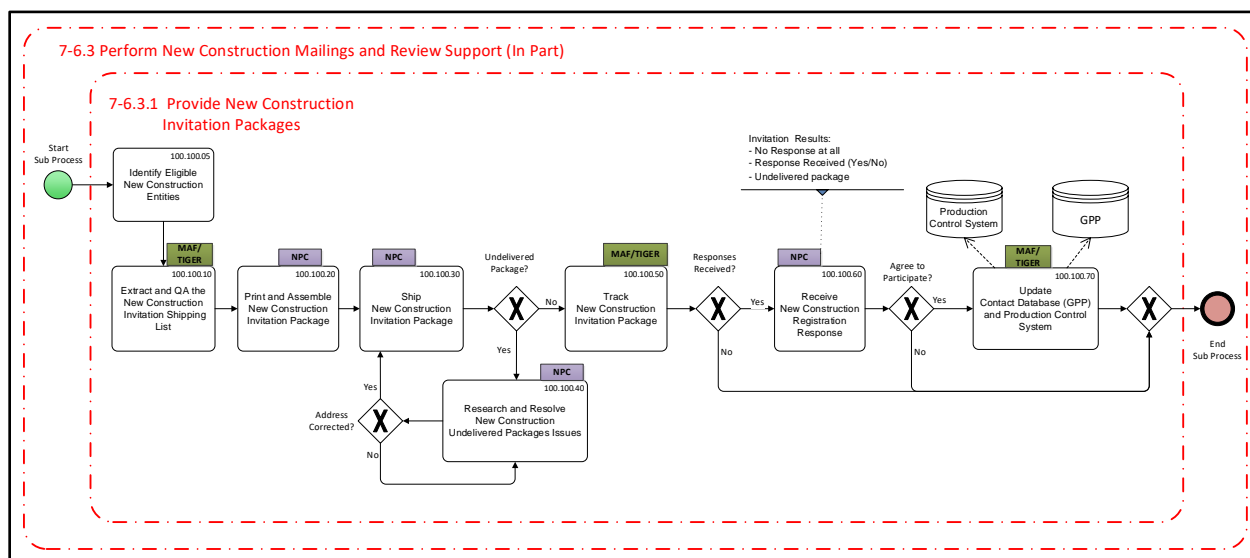


Figure 32: Provide New Construction Invitation Packages

In the spring of 2019, the Census Bureau staff coordinates with the NPC to distribute New Construction program invitation packages to approximately 32,000 state, local, and tribal governments. This package explains the New Construction program to the GU and informs the HEO and selected interested parties of the beginning of the New Construction program registration period. It also invites the GU to participate in the New Construction program and allows the HEO to fill out the registration forms for the New Construction program.

The operation consists of two waves:

- The initial invitation delivery to all active GUs.

- A reminder notification.

The content of the invitation packages varies depending on the title of the person receiving it (the LUCA Liaison and HEO will receive the registration form and other registration materials). All GUs receive English letters and forms. However, each individual gets the same package for both shipments. The package consists of some combination of the following:

- One of these letters inviting GUs to participate in the New Construction program:
 - Invitation letter to local and tribal HEOs and Courtesy Copy (CCs).
 - Invitation letter to state governors and CCs.
 - Invitation announcement to planning agencies, Council of Governments (COG), State Data Centers (SDC), Federal-State Cooperative Program for Population Estimates (FSCPE) etc. that their member governments have been invited to participate in the New Construction program.
- Registration form for HEOs only.
- Product Preference Form for local and tribal HEOs. This allows local and tribal HEOs to select the media for their materials (download either the GUPS, digital shapefiles, or digital PDF maps).
- Flyer with a brief overview of the New Construction program.
- “Reason Why Not Participating” checklist.
- Prepaid Return Shipping container.

In May 2019, the NPC sends the reminder notification to the HEO and selected CCs of all GUs that did not respond to the initial mailing.

To facilitate the creation and shipment of all packages, the Census Bureau staff generates production files for all printed materials and extracts for each mailing. The extracts will contain GU names and codes, HEO and contact names and shipment information, and codes denoting which letter and other materials to print for each GU.

The Census Bureau staff places the extract files and the files for the printed materials on a server accessible to the NPC. The Census Bureau staff will notify the NPC of the server name, the location of the materials, the directory structure, and the naming conventions. In addition, the Census Bureau staff provides specific instructions to the NPC regarding any overprinting. The NPC uses these files to determine which materials each GU will receive, print the materials, assemble them into a complete package, and ship the package. The NPC conducts a Quality Assurance process at each step of the operation. After shipment, the NPC enters the appropriate

information into the PCS. The GPP is updated with Registration information from the partner. Before all printing dates, the Census Bureau staff provides the NPC with product dimensions and paper, envelope, and other needs for shipment. The Census Bureau staff provides this information approximately two months before shipping to allow the NPC to acquire the needed supplies. The NPC is responsible for acquiring these supplies.

The Census Bureau staff provides to the NPC a test file, a written sample, and digital materials to test the printing. After the NPC conducts the test and Census Bureau staff approves, the Census Bureau staff delivers the actual production version of the file and the New Construction invitation printed materials. The NPC prints all the materials in such a way as to print as many of a GU's materials together and so save assembly time. The Census Bureau staff and NPC follow this procedure for all mailings.

In addition, during printing the NPC uses the forms and procedures supplied by the Census Bureau staff to check a specified percentage of the printed materials to ensure that print quality is consistently good and that all required information is on each page. After finishing printing, the NPC assembles the materials into the finished package.

For all shipments, the NPC moves the collated printed materials to the assembly area. The NPC uses the procedures and forms sent by the Census Bureau staff to determine the appropriate materials and insert them and the postage-paid return envelope along with the collated materials into the outgoing package.

Prior to sending the packages to shipping, the NPC must inspect a 10 percent sample of the outgoing packages to ensure that the packages contain the appropriate invitation materials.

At shipping, the NPC uses an extract provided by the census bureau staff to generate shipment labels. The NPC will attach the labels to the appropriate package.

The NPC inspects a 10 percent sample of the outgoing New Construction invitation packages to ensure that the LUCA recipient receives the appropriate invitation letter, other forms, and the return envelope. In addition, NPC ensures that the label matches the materials inside.

The NPC ships within 24 hours of packaging, using a shipping company that has a tracking system capable of locating the package and notifying the NPC of the delivery date and the signature of the person accepting delivery. Staff at the NPC enter the date shipped and the date received into the PCS.

If the shipping company provides details that a participant did not receive a package, the NPC researches and resolves the undelivered package. Research will happen by using the tracking number, contacting the government, or with the assistance of the FLD and RO/RCC staff. After

confirmation that a package was not received, the NPC will resend an invitation package to the participant.

Tracking of the New Construction invitation package will happen primarily through the New Construction PCS. Shipping data will be saved to the PCS and stored in the mailing module. The posted data will get captured in reports that GEO creates for the New Construction program. The NPC will populate the response from the paper or online registration form. The HEO and liaison information will be updated in the GPP through the PCS.

Provide New Construction Review Materials and Participant Support [LUCA 7-6.3.2]

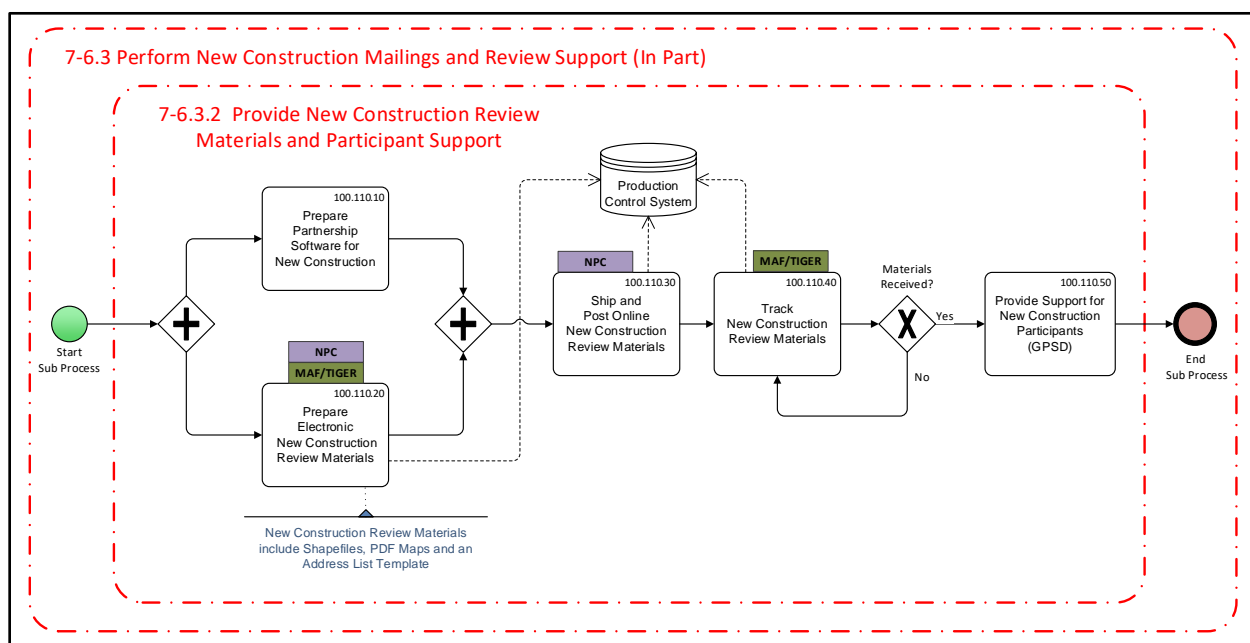


Figure 33: Provide New Construction Review Materials and Participant Support

ADCPB works with other branches in the Geography Division to obtain shapefiles, PDF maps, GUPS software, Respondent Guides, and other materials for New Construction participation. For all shipments, the Geography division uses the GDSK PCS to send the participant materials to the NPC for shipping preparation. The NPC moves the collated printed materials and the stored CD/DVDs to the assembly area. The NPC uses the procedures and forms sent by the Census Bureau staff to determine the appropriate materials and insert them and the postage paid return envelope along with the collated materials into the outgoing package.

Prior to sending the packages to shipping, the NPC must inspect a 10 percent sample of the outgoing packages to ensure that the packages contain the appropriate materials.

At shipping, the NPC uses an extract provided by the census bureau staff to generate shipment labels. The NPC attaches the labels to the appropriate package.

The NPC inspects a 10 percent sample of the outgoing New Construction program packages to ensure that the New Construction recipient receives the appropriate materials. In addition, NPC ensures that the label matches the materials inside.

The NPC ships within 24 hours of packaging, using a shipping company that has a tracking system capable of locating the package and notifying the NPC of the delivery date and the signature of the person accepting delivery. Staff at the NPC enter the date shipped and the date received into the PCS. Partners who registered to download their materials from online will be notified that they can download Geographic Update Partnership Software (GUPS) or partnership shapefiles from the website.

Should participants reviewing the New Construction program materials have additional questions within their 45-day review period, they can refer to the New Construction program User Guide included in the materials, access the New Construction program online FAQ, or personally contact the Geographic Programs Support Desk at NPC.

Geographic Programs Support Desk (GPSD)

The GPSD is responsible for answering questions from participants regarding their New Construction program materials. The Census Bureau staff will provide training and documentation for the GPSD staff. The GPSD will maintain a call log identifying who took the call; the date and time of the call; the entity ID, regional office, entity name, entity state; first and last name and phone number of the participant making the call; a description of the problem; whether the problem is closed, and if closed, the date closed, and if not closed, the status of the problem.

The New Construction program support desk is comprised of three tiers:

- Tier 1 is located at the NPC and is staffed by the NPC clerks. The tier 1 support desk is primarily responsible for handling questions from smaller governments, and nontechnical questions such as updating contact information or other calls following scripts.
- Tier 2 is also located at the NPC and is staffed by the geographic specialists. The tier 2 support desk is responsible for trouble-shooting technical questions that are more complex.
- Tier 3 comprises the RO geographers and Census Bureau staff. When the tier 1 and tier 2 NPC support staff cannot answer a participant's inquiry, they will transfer the participant to staff either at the RCC or at GEO. Tier 3 staff is also responsible for responding to

calls and entering information from the larger governments, such as states or larger cities, and from tribal governments.

4.2.4 Manage and Validate New Construction Returns [LUCA 7-6.4]

A detailed view of the activities that make up the “Manage and Validate New Construction Returns” operational subactivity is given in Figure 34 below.

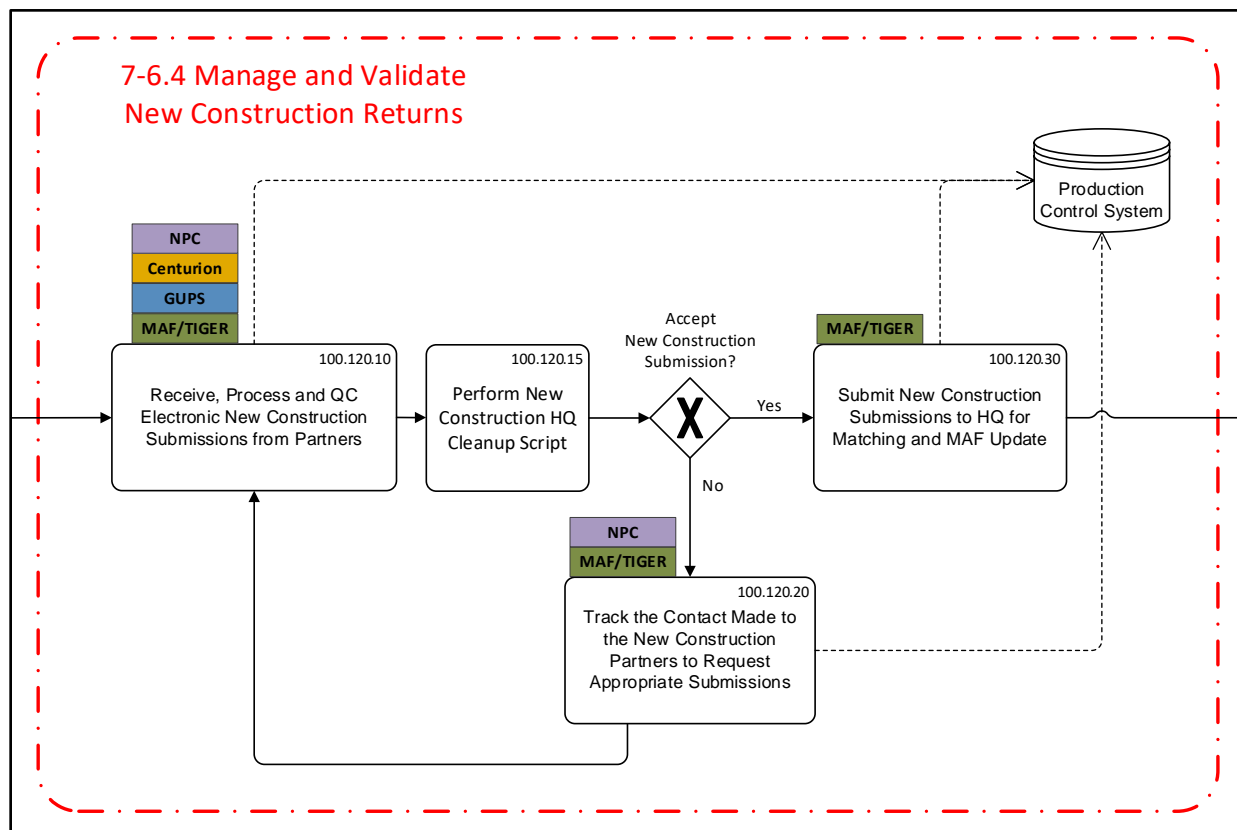


Figure 34: Manage and Validate New Construction Returns

Once the New Construction program participants finish their review and submit addresses for new living quarters to the Census Bureau, NPC staff records each submission in the PCS. The NPC staff reviews each submission for completeness, preprocesses submissions, enters statuses in the PCS, and submits submissions to HQ for matching and validation.

During address matching, some New Construction addresses will be validated. After all addresses have been validated, HQ staff updates the MAF/TIGER system.

4.2.5 Closeout New Construction Program [LUCA 7-6.5]

A detailed view of the activities that make up the “Closeout New Construction Program” operational subactivity is given in Figure 35 below.

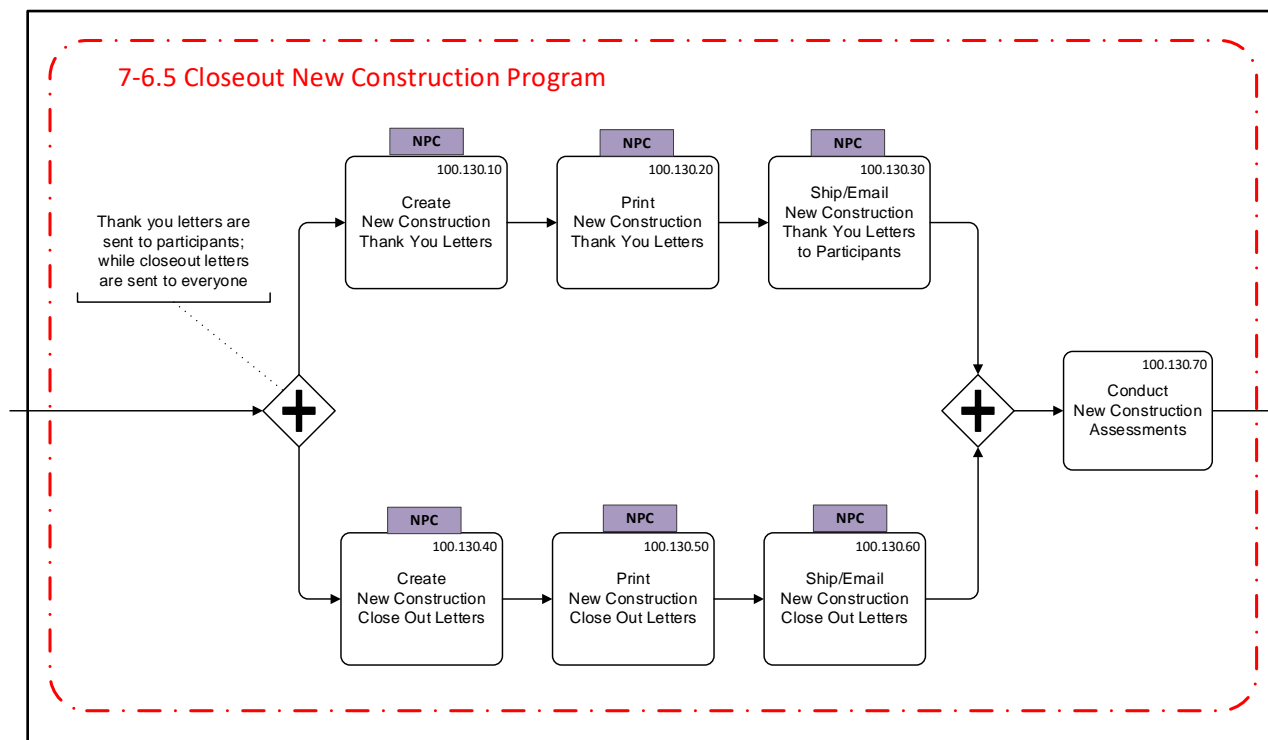


Figure 35: Closeout New Construction Program

Governments are provided some type of closeout letter based on their participation or nonparticipation in New Construction. The Thank you letter, created by the Census Bureau, goes to participating entities who returned a submission. NPC emails the letters to the partners in the winter of 2019. If a partner does not have a deliverable email address, then NPC ships the Thank you letter.

The Closeout letter, created by the Census Bureau, goes to participating entities who returned a submission after the deadline of November 22, 2019. The Closeout letter ships in the winter of 2019 from NPC if the partner does not have a deliverable email address.

5. Cost Factors

5.1 LUCA Cost Factors

Investment in LUCA is projected to have minimal influence (reduce ↓ or increase ↑) on the 2020 Census overall costs in the following ways:

While the LUCA operation is not a major cost driver for the 2020 Census, the following mechanisms from the IDEF0 Context Diagrams represent the resources used to support this operation and comprise the 2020 Census cost elements:

Staff

- HQ Staff
- NPC Staff
- RO/RCC Staff

Sites

- HQ
- NPC
- RO/RCC
- LUCA Workshop and Training Locations

Systems

- GPP
- PCS
- MAF/TIGER
- GUPS
- Rimage Disk Publishing
- GPQCPS
- GDSK PCS

Other

- HQ Office IT Infrastructure
- Census Networks

5.2 New Construction Cost Factors

While the New Construction program is not a major cost driver for the 2020 Census, the following mechanisms from the IDEF0 Context Diagrams represent the resources used to support this operation and comprise the 2020 Census cost elements:

Staff

- HQ Staff
- NPC Staff
- RO/RCC Staff

Sites

- HQ
- NPC
- RO/RCC

Systems

- GPP
- PCS
- MAF/TIGER
- GUPS
- Rimage
- GPQCPS
- GDSK PCS

Other

- HQ Office IT Infrastructure
- Census Networks

6. Measures of Success

For the 2020 Census operations, the corresponding Measures of Success will be documented in the operational assessment study plans and final reports. The operational assessment study plan documents the criteria that will be used to define successful completion of the operation. The operational assessment report will provide results on whether the criteria were met.

In general, operational assessments report on planned to actual variances in budget, schedules, and production and training workloads. The corresponding Measures of Success (as documented in the operational assessment study plan) include variances that exceed established thresholds. See *Preparing for the 2020 Census Operational Assessment Study Plan* for the potential scope of assessment.

Types of success measures include:

- **Process Measures** that indicate how well the process works, typically including measures related to completion dates, rates, and productivity rates.
- **Cost Measures** that drive the cost of the operation and comparisons of actual costs to planned budgets. Costs can include workload as well as different types of resource costs.
- **Measures of the Quality** of the results of the operation, typically including things such as rework rates, error rates, and coverage rates.

See the corresponding operational assessment study plan and report for each the Local Update of Census Addresses operation (LUCA) and New Construction program for details on the measures of success.

Appendix A – Terminology and Acronyms

Table 13 lists the specific acronyms and abbreviations used within this Detailed Operational Plan document.

Table 13: Acronyms and Abbreviations List

Acronym	Meaning
ACO	Area Census Office
ACSD	Administrative and Customer Services Division
ADCPB	Address Data Collection and Products Branch
BCU	Basic Collection Unit
BPM	Business Process Model
CC	Courtesy Copy
CI	Coverage Improvement
COG	Council of Governments
CRO	Count Review operation
DCMD	Decennial Census Management Division
DPD	Data Products and Dissemination operation
DSF	Delivery Sequence File
ETL	Enumeration at Transitory Locations operation
FAQ	Frequently Asked Questions
FLD	Field Division
FLDI	Field Infrastructure operation
FSCPE	Federal-State Cooperative for Population Estimates
GDP	Geographic Data Processing

Acronym	Meaning
GDSK PCS	Geographic Disk Production Control System
GEO	Geography Division
GEOP	Geographic Programs operation
GIS	Geographic Information System
GPP	Geographic Program Participants database
GPQCPS	Geographic Programs Quality Control and Plotting System
GPSD	Geographic Programs Support Desk
GQ	Group Quarters operation
GSS	Geographic Support Systems
GU	Governmental Unit
GUPS	Geographic Update Partnership Software
HEO	Highest Elected Official
HQ	Headquarters
HU	Housing Unit
IOD	Integrated Operations Diagram
IPT	Integrated Project Team
LUCA	Local Update of Census Addresses
MAF	Master Address File
NPC	National Processing Center
NRFU	Nonresponse Followup, Nonresponse Followup operation
OMB	[United States] Office of Management and Budget
PCS	Production Control System

Acronym	Meaning
PDF	Portable Document Format
P.L.	Public Law
RCC	Regional Census Center
RO	Regional Office
RPO	Response Processing operation
SWIM	Secure Web Incoming Module
TEA	Type of Enumeration Area
TIGER	Topologically Integrated Geographic Encoding and Referencing system
UE	Update Enumerate operation
UL	Update Leave operation
USPS	United States Postal Service

Appendix B – References

Appendix B lists the documents or other resources referenced within this Detailed Operational Plan document.

U.S. Census Bureau (2003), “Evaluation of the Local Update of Census Addresses 98 (LUCA 98) Final Report.” Version 1.0, April 16, 2003.

U.S. Census Bureau (2012), “2010 Local Update of Census Addresses Assessment,” Version 1.0, March 7, 2012.

U.S. Census Bureau (2017), “[2020 Census Operational Plan](#),” Version 3.0, October 27, 2017.

U.S. Census Bureau, *Preparing for the 2020 Census Operational Assessments Study Plan*.

U.S. Census Bureau (2015), “2020 Census Local Update of Census Addresses Program Improvement Project Recommendations,” Version 1.0, April 13, 2015.

U.S. Census Bureau (2016), “Operational Assessment Content Guidelines for the 2018 End-to-End Census Test and the 2020 Census,” Draft, May 10, 2016.

Appendix C – Activity Tree for Local Update of Census Addresses Operation (LUCA) including New Construction Program (NC)

This appendix presents the Activity Tree for the LUCA operation and NC Program. An Activity Tree uses an outline structure to reflect the decomposition of the major operational activities in the operation. Each activity is numbered according to its position in the outline. For example, for the current operation numbered “7,” the first activity would be numbered 7-1. Sub activities under this activity would be numbered sequentially, starting again with the number one. For example, the first subactivity under the first activity would be numbered 7-1.1 the second subactivity as 7-1.2. The second activity would be numbered 7-2, and so on.

LUCA Activity Tree:

- 7-1 LUCA Outreach
 - 7-1.1 Prepare for LUCA Outreach and Participation
 - 7-1.1.1 Obtain OMB Clearance for LUCA Operation
 - 7-1.1.2 Prepare and Publish Procedures for LUCA Appeals
 - 7-1.2 Conduct LUCA Internal Training and Promotions
 - 7-1.2.1 Conduct LUCA Internal Training
 - 7-1.2.2 Conduct LUCA Promotions
 - 7-1.3 Provide LUCA Outreach Materials and Training
 - 7-1.3.1 Provide LUCA Advance Notice Packages
 - 7-1.3.2 Provide LUCA Invitation Packages
 - 7-1.3.3 Conduct LUCA Participant Training
- 7-2 LUCA Review
 - 7-2.1 Provide LUCA Participant Review Materials
 - 7-2.2 Support LUCA Partners During Review Process
- 7-3 LUCA Returns and Validation
 - 7-3.1 Process LUCA Feature Updates
 - 7-3.2 Perform Preprocessing of LUCA Address Updates
 - 7-3.3 Perform LUCA Matching and Address Validation
- 7-4 LUCA Feedback and Appeals
 - 7-4.1 Provide Feedback to LUCA Participants
 - 7-4.2 Support OMB in Establishing LUCA Appeals Office
 - 7-4.3 Process Accepted LUCA Appeals from OMB
- 7-5 LUCA Closeout
 - 7-5.1 Closeout LUCA Participants
 - 7-5.2 Closeout LUCA Operation

- 7-6 New Construction (NC) Program
 - 7-6.1 Plan New Construction Program
 - 7-6.2 Conduct New Construction Promotions and Training
 - 7-6.2.1 Conduct New Construction Promotions
 - 7-6.2.2 Conduct New Construction Training
 - 7-6.3 Perform New Construction Mailings and Review Support
 - 7-6.3.1 Provide New Construction Invitation Packages
 - 7-6.3.2 Provide New Construction Review Materials and Participant Support
 - 7-6.4 Manage and Validate New Construction Returns
 - 7-6.5 Closeout New Construction Program